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ABSTRACT

This publication contains seven papers, six of which were presented at a 1968 conference sponsored by the Elementary Education Advisory Council of the ASCD in cooperation with the Department of Elementary-Kindergarten-Nursery Education of the NEA. Topics covered include elements and issues in curriculum-making for children, present trends in elementary curriculum, educational technology, value conflicts and social problems, the neighborhood school, and models and theories of curriculum design. (LLR)

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A Curriculum for Children

By the ASCD Elementary
Education Advisory Council

ALEXANDER FRAZIER, Editor

EA 002 887

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Preface

ALL of these papers but one were presented at the January 1968 conference sponsored by the Elementary Education Advisory Council of the Association for Supervision and Curriculum Development in cooperation with the Department of Elementary-Kindergarten-Nursery Education of the National Education Association. The conference theme, "A Curriculum for Children," has been used as the title of the collected papers.

The one paper originating elsewhere is Robert J. Havighurst's analysis of "The Neighborhood School: Status and Prospects," which was commissioned separately by the Council and is included here to ensure a wide distribution.

The Council is indebted to Robert R. Leeper, associate secretary and editor for publications of the Association for Supervision and Curriculum Development, for final editing of the manuscript. Technical production was handled by Mary Albert O'Neill, Lana G. Pipes, Nancy Olson, and Karen T. Brakke.

ALEXANDER FRAZIER

The Setting

Curriculum Making for Children: Elements and Issues

Alexander Frazier

FOR present purposes, curriculum making can be defined as laying out what is to be learned and setting up the conditions under or through which learning is to take place. We are concerned here with two tasks: (a) identifying the enduring elements of curriculum making for children as found in our past experience and (b) pointing up a few of the current issues that may force us in time to redefine some of the elements. The statement is meant to provide us with a general context in which to entertain new notions about what children need to learn.

Selecting the elements that are most characteristic of curriculum development at the early levels of schooling calls for an attempt to separate such elements from those that run all the way through grade 12 or beyond. Success in realizing such an intention is granted to be impossible, but perhaps as far as focus is concerned there is something to be gained from the attempt.

1. Child Development as the Base

> The wisest writers devote themselves to what a man ought to know, without asking what a child is capable of learning.—Jean-Jacques Rousseau, *Emile* (1780).[1]

[1] Jean-Jacques Rousseau. *Emile.* Translated by Barbara Foxley. New York: E. P. Dutton & Company, 1950. p. 3.

Curriculum making for children necessarily has its base in how children grow and develop. Children have ways of learning all their own. They proceed through certain growth phases during which some kinds of learning are possible and appropriate, others impossible and inappropriate. Their learning skills evolve, so to speak, as children mature. They become increasingly able to deal with the remote, the abstract, and the systematic. But to begin with, they can only learn, or at least learn best, what lies close at hand and is simple and concrete. In their progress through the successive stages of natural growth, children will differ in both readiness and rate. Yet in time all of them will go through the same stages if properly guided.

These truths, as we call them, have been garnered from several centuries of concern for differentiating the curriculum for children from what is suitable for older learners. The modern era of elementary education may be conceded to have begun with the publication of *The School of Infancy* in 1633. We could even say that it began with the first effort to push concern for educating the child back to the cradle, thus laying down to begin with that the whole child must be considered.

In his manual for mothers, Bishop Comenius reminds his reader of older and better times when "joyousness" had characterized the learning of children, and seeks, by setting forth "the true method," to release young learners from the prospect of abuse from indolent and ignorant teachers. "Instruction should not be apportioned precisely to certain years and months (as afterwards in other schools) but generally only," he advises his mothers. The home cannot keep to fixed patterns like the school, and "Furthermore, in this early age all children do not develop at the same time, some beginning to speak in the first year, some in the second, and some in the third." [2]

In his later and more formal work on teaching, the *Analytical Didactic* (1649), Comenius tried to be as precise as possible about the principles of his method. His sixty-fourth proposition [3] runs as follows:

> We must always begin with the few, the brief, the simple, the general, the near, the regular, and proceed gradually to the more

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[2] John Amos Comenius. *The School of Infancy.* Edited by Ernest M. Eller. Chapel Hill: University of North Carolina Press, 1956. p. 74.

[3] John Amos Comenius. *The Analytical Didactic of Comenius.* Translated and edited by Vladimir Jelinek. Chicago: University of Chicago Press, 1953. p. 123.

numerous, the more extensive, the more complex, and more particular, the more remote, the more irregular.

Some of the central concepts of child development were present, then, from the very beginning of the movement to construct a new and better curriculum for children. Tracing this basic element through the intervening years is beyond the scope of this paper. We may merely note that Rousseau served to place concern for supporting the natural development of the child within the larger philosophical and political context of the eighteenth century. We might also note that beginning with Pestalozzi and continuing through Piaget the convention has been well established that the child, to use Father Pestalozzi's language, moves as a matter of course from intuitive to intelligent thought.

Thus, the base of curriculum making for children is a knowledge of how they grow and develop. This knowledge determines or at least influences to a very large extent every decision to be made in planning and implementing the program of instruction.

Challenges to Child Development Base

The charge is made today that we have relied too heavily on our present knowledge of how children grow and develop. By assuming that intellectual development and physical development are analogous and waiting unduly upon what we have called readiness for cognitive learning, we have underestimated the capability of the child. Even more seriously, we are now charged with having failed a segment of society and perhaps society itself. By accepting a developmental point of view, we have seemed to regard differences among socioeconomic groups in rate and range of learning as innate and inalterable, organic or genetic, rather than something over which we could have some control if we cared to exercise it.

Redefinition of readiness. The chapter on readiness in *The Process of Education* opens with the most quoted single sentence in the educational literature of this decade: "We begin with the hypothesis that any subject can be taught effectively in some intellectually honest form to any child at any stage of development."[4]

The chapter as a whole examines the work of Piaget and has as its recurrent theme that "The task of teaching a subject to a child at any particular age is one of representing the structure of that subject in terms of the child's way of viewing things." [5]

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[4] Jerome S. Bruner. *The Process of Education.* New York: Vintage Books, 1960. p. 33.

The redefinition of readiness so proposed includes two aspects that may have been slighted in past investigations. Both are now under extensive study. The most immediate, of course, is the popular if somewhat simplistic attempt to see how early in the school program we can effectively introduce basic concepts. The other focus is on how children learn concepts.

The renewed interest in Piaget reflects this latter concern.[6] We may anticipate that as the study of children's thinking is extended, new categories will be proposed that will be less restrictive than Piaget's. For example, the investigation of language development, being undertaken so ambitiously by a new generation of linguists and psychologists, is already revealing a level of competence in the child by the age of four or five that arises out of his unsuspected power to abstract from his experience with language the complex rules of the grammar game.[7]

The more familiar concept of readiness is meanwhile being buttressed by an older generation of scholars. The recent research on school placement by the Gesell Institute indicates that one-third of the pupils in American schools are over-placed, that is, are assigned to work beyond their achievement level.[8]

Social intervention in intellectual development. Half a child's total capacity for cognitive functioning is developed by or about the age of four, 80 percent by or about the age of eight. These dramatic generalizations derived by Bloom from his review of research on intellectual development [9] are exercising tremendous influence on our thinking about the importance of early childhood education. Capacity that is not developed is forever lost; therefore, if we really want success in later learning, we must be concerned with capacity development at a time when our concern will count for the most.

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[5] *Loc. cit.*

[6] Millie C. Almy. *Young Children's Thinking: Studies of Some Aspects of Piaget's Theory.* New York: Teachers College Press, 1966.

[7] Philip Gough. "The Limitations of Imitation: The Problem of Language Acquisition." In: *New Directions in Elementary English.* Alexander Frazier, editor. Champaign, Illinois: National Council of Teachers of English, 1967. pp. 92-109.

[8] Louise B. Ames. *Is Your Child in the Wrong Grade?* New York: Harper & Row, Publishers, Inc., 1967.

[9] Benjamin Bloom. *Stability and Change in Human Characteristics.* New York: John Wiley & Sons, Inc., 1964.

We are still trying to understand what such intervention will look like. One of the companies that produce toys has announced the availability of a variety of crib devices that are meant to stimulate visual and auditory discrimination. An enterprising nursery school in Atlanta has publicized a planned program of education for infants under 12 months.[10]

Yet whatever our uncertainties, we are in agreement that thinking of intellectual capacity as something that is developed rather than fixed opens a great many new possibilities for professional as well as social intervention. It also closes a door on the past that should have been closed a long time ago.

2. Method as the Message

To teach well is to enable someone to learn rapidly, agreeably, and thoroughly.—John Amos Comenius, *Analytical Didactic* (1649).[11]

Driven as he is by what might almost be considered an organic need to know and learn, the learner requires from outside himself most of all an environment rich in resources for learning and adult support in the exploration of these resources. Although support takes a variety of shapes, it must certainly include respect for and use of the exploratory impulse found in physical activity in general and play in particular; provision of many opportunities for manipulation of and experimentation with the items and events of the immediate environment; regularization of the processes of becoming progressively more accurate in identifying these items and events by name, setting up categories in terms of their attributes, and classifying new items and events as encountered; and a continuous concern for the role of socialization and interaction in the whole range of learnings. In short, the ways in which learning takes place become an important part of any curriculum for children.

More than a century ago, after a sympathetic summary of the tenets of Pestalozzi and his followers, Herbert Spencer raised the question of whether, given the natural impulse of the child to learn, there was any real need of planning a curriculum.

> If it be true that the mind like the body has a predetermined course of evolution—if it unfolds spontaneously—if its successive desires for

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[10] "Learning Starts Early for Babies." *The Atlanta Journal* 27: 5-B; December 27, 1967.

[11] Comenius. *The Analytical Didactic of Comenius, op. cit.*, p. 96.

this or that kind of information arise when these are severally required for its nutrition—if there thus exists in itself a prompter to the right species of activity at the right time; why interfere in any way? Why not leave children *wholly* to the discipline of nature?—why not remain quite passive and let them get knowledge as they best can?—why not be consistent throughout? [12]

Spencer concluded that because of his unusually lengthy period of dependence, the child does need help and that by analogy, the intellectual as well as the physical "conditions requisite to growth" should be provided.

Yet in elementary education the centrality of the concept of "self-evolution," to use Spencer's term, has put the function of method very close to the base of child development as a controlling element in curriculum making. Herbart's psychology contributed a rationale on interest and helped through its analysis of apperception or assimilation to build a foundation for a truly modern conception of the learner as a necessarily active agent in his own learning.

Spencer thus set the scene for the appearance of John Dewey, our own great methodologist, who could conclude that "To find out how to make knowledge when it is needed is the true end of the acquisition of information in school, not the information itself." [13] The conditions for learning become in effect the curriculum or at least a curriculum. The learner is the true curriculum maker. The teacher is a "watcher and helper." [14] Method does become the message.

Methodology has thus long been a central element in curriculum making for children. The conditions provided for learning and the kind of learning supported become almost as important in the education of children as what is being taught.

Demands on Methodology

More than ever seems to be expected of methodology. If children fail to learn, it must be because we do not know how to teach. Analyses of teaching behavior, one of the major research interests of the era, have already been closely followed by new preservice programs designed to teach how to teach more efficiently. Mastery in learning has been revived as a goal of teaching and is currently being coupled with a technology that promises to guarantee success. At the same time, new expectations are being set that the teacher will come to know how to conduct "discovery" activities at a higher level than in the past.

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[12] Andreas M. Kazamias, editor. *Herbert Spencer on Education.* New York: Teachers College Press, 1966. p. 162.

[13] John Dewey and Evelyn Dewey. *Schools of Tomorrow.* New York: E. P. Dutton & Company, 1915. p. 16.

[14] *Ibid.*, p. 172.

Prescriptive teaching. Probably no problem in methodology has received more attention during the past half century than how to individualize instruction. At this point in time, we seem almost to have resolved the problem. The preparation of self-teaching and machine-tutored study materials of great sophistication makes new approaches possible. We can anticipate that before long many of the facts and skills we have tried to teach in a group setting can be taught more effectively in situations where each learner is put to tasks that have been selected for him and for him only in his progress through carefully laid out lesson sequences.[15]

Methodology in some fields has become plainly more prescriptive. For example, one analyst of what is going on in the language development of young disadvantaged children identifies three different prescriptive approaches in this area. These approaches are: the adaptation of modern language methods to the teaching of standard English to preschool children, with stress on imitation, repetition, and drill; the use of programmed materials; and the revival of the Montessori method, with its base in logicized sense training.[16]

The current emphasis on objectives contributes to the interest in prescriptive teaching. The tripartite taxonomizing of objectives has forwarded the movement toward specificity of purpose. Teachers are being helped in learning how to write objectives more precisely and effectively. Computerized instruction combines built-in diagnosis with tutoring and thus provides us with a model of prescriptive teaching that goes beyond anything we have had in the past.

Teaching for inquiry. A concern is also being widely evidenced for learning more about teaching children how to find out for themselves what they need to know. In some cases, the ends of inquiry are the same as those proposed for prescriptive teaching; the learner discovers the ends for himself, however, through dealing with selected data that point the way[17] or through engaging in a closely supervised process of definitive questioning.[18]

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[15] Alexander Frazier. "Individualized Instruction." *Educational Leadership* 25: 616-24; April 1968.

[16] Rose M. Bromwich. *Developing the Language of Young Disadvantaged Children.* Washington, D.C.: Department of Elementary-Kindergarten-Nursery Education, National Education Association, 1968.

In others, the emphasis is more open-ended. Teaching teachers how to ask the right kinds of questions for the purpose of stimulating inquiry has become an absorbing interest of contemporary methodology. An outgrowth of the many studies in verbal behavior of teachers conducted during the past decade,[19] the burden of the renewed attention to questioning is that too few teachers question in ways designed to excite thinking. The manuals for the textbooks in most of the subject areas continue to give good advice on formulating "thought" as well as "fact" questions, but in practice teachers are found to question mostly to make sure that pupils have got what they were supposed to get from reading or study.

More broadly, the renewed concern for inquiry is centered on setting up situations that ensure the development of investigative skills. The attention to building up adequate materials centers in elementary schools represents one aspect of this emphasis.[20] Some attempts to analyze and redefine teaching do so in terms of "new" teacher roles and functions, reminiscent of Progressive Education; the teacher is to facilitate, guide, and help rather than tell or "teach."[21]

3. Content Analysis as Inspiration and Logic

Ideas of the elements of instruction were for a long time working in my mind, vividly though indistinctly, until at last, like a *Deus ex*

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[17] Jerome S. Bruner. "The Act of Discovery." In: *On Knowing: Essays for the Left Hand.* Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1962. pp. 81-96.

[18] Richard Suchman. "Inquiry Training in the Elementary School." In: *Teaching: Vantage Points for Study.* Ronald T. Hyman, editor. Philadelphia: J. B. Lippincott Company, 1968. pp. 434-41.

[19] For a comprehensive collection of reports on these studies, see: Ronald T. Hyman, editor. *Teaching: Vantage Points for Study.* Philadelphia: J. B. Lippincott Company, 1968.

[20] Peggy Sullivan, editor. *Realization: The Final Report of the Knapp School Libraries Project.* Chicago: American Library Association, 1968.

[21] Examples of new books in teacher education that stress the concern for inquiry are: William D. Romey and others. *Inquiry Techniques for Teaching Science.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968; and Bernice Goldmark. *Social Studies: A Method of Inquiry.* Belmont, California: Wadsworth Publishing Company, Inc., 1968.

machina, the conception that the means of the elucidation of all our intuitional knowledge proceed from number, form, and speech seemed suddenly to give me new light on the point which I was investigating.—John Henry Pestalozzi, *How Gertrude Teaches Her Children* (1801).[22]

Every subject field contains essential concepts that can be identified and related by the application of inspiration and logic so that what is most significant in the area can be laid out for learning by the young. The search for the essence of a field is central to curriculum making, of course, and requires the application of unusual competence by persons equipped with the vision as well as the scholarship that enables them to encompass the whole of the field.

Remarkable persistence is also required to spell out logically and in fullness of detail the parts within the larger framework, whatever it may be. Once completed, the content analysis of a field provides a guide for making use of every opportunity in children's experiences to teach what needs to be learned and also, of course, for ensuring that in due time all the episodes of learning combine into an organized whole.

"Geography's beginnings start right in the first year when babies learn to distinguish their cradles from their maternal bosoms," Comenius pointed out to mothers.[23] The occasions for learning in succession some of the key concepts of optics, astronomy, chronology, politics, dialectics, drawing, grammar, rhetoric, and all the other seventeenth century subjects were noted in *The School of Infancy.* Much of Bishop Comenius' life was spent in writing textbooks that incorporated the results of his application of the twin forces of inspiration and logic to the analysis of content in many of these fields. His later years were devoted to the task of trying to reduce and relate all the knowledge of his times into such form that it might be taught to everyone the world around.

Pestalozzi found in form, number, and language the bases for reducing and relating much of the content he felt was needed by the young as a foundation for later learning. Much of his life was spent in what he called "psychologizing" or "routinizing" the more complex subject fields so that unskilled teachers could teach bits and pieces that would be sure to add up.

Froebel found in his gifts and occupations a way of providing young learners with what he considered to be "an organized whole"; all aspects of nature—forms and "forces, materials, sounds, and colors have relations among themselves and with the whole world."[24]

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[22] Henry Barnard, editor. *Pestalozzi and His Educational System.* New York: C. W. Bardeen, 1906. p. 675.

[23] Comenius. *The School of Infancy, op. cit.,* p. 87.

Analysis of the content of what is to be learned is obviously of first importance among the elements of curriculum making for children. The sources and uses to be made of the analyses are always of great concern to us.

Expectations of Content Analysis

Stress on the structure of the disciplines as the determinant of content, with an emphasis on identifying and relating key concepts and generalizations in a given subject field, has been the major phenomenon of our era in curriculum making at every level. However, there has now arisen another aspect of analysis that may in the long run be even more influential and possibly more lasting.

Buttressed by the methodological concern for objectives-writing and the urgency for spelling out the content mastery steps in programming and computerizing, a new sense exists that logical analysis of narrower pieces may yield a body of content more teachable because it is scientifically accurate.

Scientific analysis of content. Part and perhaps much of our trouble in teaching has come from the fact that what we have tried to teach has not always been true. For example, the apparatus of Latin grammar applied by analogy to English served to falsify its structure. The content drawn from the traditional grammar has now been replaced, in the new grammar or grammars, by a picture of the language that is truer and therefore more teachable.[25]

In the elementary school, argument of this kind is liveliest today, of course, in the field of reading. The varied attempts to use a scientific analysis of our language in deciding what should be taught to beginning readers has aroused great interest and perhaps as much confusion.[26] But the hope persists that there will be a breakthrough in handling this most complex set of teaching tasks.[27] A similar hope exists in the application of linguistic analysis to the selection of content in the teaching of spelling.[28]

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[24] S. S. Fletcher and J. Walton, translators and editors. *Froebel's Chief Writings on Education.* London: Edward Arnold and Company, 1912. p. 109.

[25] See teacher's editions of Paul Roberts. *The Roberts English Series: A Linguistics Program.* New York: Harcourt, Brace & World, Inc., 1966.

[26] Russell G. Stauffer, editor. *The First-Grade Reading Studies.* Newark, Delaware: International Reading Association, 1967.

4. Unification as an Aim

> The frequent criticism of existing education on the ground that it gives a smattering and superficial impression of a large and miscellaneous number of subjects is just. But the desired remedy will not be found in a return to mechanical and meager teaching of the three R's, but rather in a surrender of our feverish desire to lay out the whole field of knowledge into various studies, in order to "cover the ground." We must substitute for this futile and harmful aim the better ideal of dealing thoroughly with a small number of typical experiences in such a way as to master the tools of learning, and present situations that make pupils hungry to acquire additional knowledge.—John Dewey and Evelyn Dewey, *Schools of Tomorrow* (1915).[29]

Trying to teach children separately all that may need to be learned in the varied subject fields results in a fragmented curriculum that may in turn mean that no field is thoroughly taught. Also the fields differ in kind: some are rich in substantive learnings, others are comprised mainly of skills. If some sort of unification of effort is necessary to reduce the range of subjects, it seems reasonable to teach where possible the skills subjects while the content of the more substantive areas is being developed. In fact, as children use what they have learned in school to deal with out-of-school tasks, they must necessarily call upon learnings from different fields. If they have learned these sets in some integrated way in school, their later use may be facilitated. Indeed, coordinating the learnings of the varied substantive fields themselves as well as the learnings from the skills subjects around major topics or problems may be one of the best ways to prepare for the multidisciplinary attack on later problems. Such coordination may also help the learner understand better the key concepts that are common to more than one field.

The effort of Pestalozzi to integrate intuitive knowledge or first learnings around the key concepts of form, number, and language represents the initial drive in elementary education to relate in one way or another as much knowledge as possible for the purpose of expediting its learning by the young. During the nineteenth century, the philosophical bent toward universalism was reflected in the educational thinking of Herbart and his school. Integration of knowledge, to Herbart, began, as one commentator has put it, with the triangle, the form of which Herbart proposed should be put before the infant in his crib, and ended with the moral law.

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[27] Jeanne S. Chall. *Learning To Read: The Great Debate.* New York: McGraw-Hill Book Company, Inc., 1967.

[28] Paul R. Hanna. *Phoneme-Grapheme Correspondences as Cues to Spelling Improvement.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1966.

[29] Dewey and Dewey, *op. cit.*, pp. 15-16.

More practically, some of Herbart's followers sought to unify learnings either by concentrating them around a few fields or more successfully coordinating them across the board. The best known of the programs of concentration, developed a hundred years ago by Professor Ziller at his pedagogical seminary and practice school in connection with the University of Leipzig, called for the elementary program to begin with fairy tales in grade one, move to *Robinson Crusoe* in grade two, and thereafter branch into a twofold concentration on Biblical history and Germanic folk-literature and history. As interpreted by one American student, the number work related to the study of Andersen's "The Fir Tree" in the first grade might have included counting the number of needles on a pine bough, the number of wheels on the wagon that hauled the tree away, and the number of legs on a rabbit that happens to appear in the tale.[30]

More familiar to us are the many examples of less extreme efforts to coordinate learnings among the various fields around unit topics in science or especially in the social studies. The most enduring result of this emphasis on coordination is found, of course, in the successful effort to relate allied fields in the language arts, the social studies, mathematics, and science.

The integration of subject fields in curriculum making for children is well established as one way to provide for unification of impact in teaching. Such integration has come to be an accepted and major element in our thinking about the design of the instructional program.

Questions About Content Unification

Probably the usefulness or relevance of none of the enduring elements of childhood education has been more vehemently challenged in recent years than the integration of subject fields. The redevelopment of the disciplines has seemed to work against the idea, as has the general feeling that elementary school teachers need to become more competent in content and the consequent agreement that specialization should be provided for in the staff one way or another. The emphasis on cognitive development has seemed to reduce concern for developing or clinching skills through broadening the base of their application to content from other fields or the problems of group living. This drawing in is nowhere better demonstrated than in the reserve of the new mathematics toward venturing outside its field. There is not much talk these days about learning to measure by finding out how much space is available for a group mural or making the room count and the collection of lunch money central to the arithmetic program.

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[30] Charles DeGarmo. *Herbart and the Herbartians*. New York: Charles Scribner's Sons, 1896. pp. 124-25.

Deunification for emphasis. What we may anticipate, no doubt, is that once a field has been worked over thoroughly, there may be some effort to resume the search for appropriate integration. Certainly that would seem likely to be the case within such a field as social studies, which has been taken apart for emphasis on neglected areas like economics and anthropology.[31] The attention to literature apart from the other language arts, while useful, is already being modified by efforts to find new ways to relate the language arts as mutually reinforcing.[32]

It is noteworthy that science and mathematics for the most part have remained well-integrated internally at the elementary level even in the face of the most intense public and professional concern for their redevelopment and upgrading.

Cooperative teaching toward unity. The movement to specialization in teaching has been accompanied by the invention of a variety of ways to bring teachers together to work for some unity of impact. At its best, cooperative teaching can make it possible for a staff to bring to bear its resources for more integration than was possible under departmentalization as such.[33]

When teachers are working with children of several age levels, cooperative teaching may make it possible to bring greater unity into the experience of individual children through greater assurance of continuous progress through the program.[34]

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[31] Dorothy M. Fraser. "Social Studies in the Elementary School: A Case Example of New Content." In: *The New Elementary School.* Alexander Frazier, editor. Washington, D.C.: Association for Supervision and Curriculum Development, 1968. pp. 114-28.

[32] Roberts, *op. cit.*

[33] See: "Cooperative Teaching." *National Elementary Principal* 44: 8-86; January 1965; the entire issue.

But when all is said and done, most of us may feel that the current curriculum scene is marked by excessive fragmentation and absence of real consideration, across as well as within fields, for the unification of children's learning experiences. We believe also that there is little evidence at hand of any rising concern over the loss.

5. Purpose as a Problem

I call therefore a compleat and generous Education that which fits a man to perform justly, skilfully, and magnanimously all the offices both private and publick of Peace and War.—John Milton, *Of Education* (1644?).[35]

The main purpose of elementary education is so much a matter of course than its function in determining curriculum is taken for granted. A child, as everybody knows, needs to learn first of all to read and write his native language and to get a hold on the world of numbers. At the same time, he may be expected to take his first steps in the other organized fields of knowledge considered by his culture to possess value in themselves.

Within this framework, the child will probably have some content identified as particularly important because it contributes to citizenship and serves as an induction into the national heritage. In simpler or developing societies, some learnings may also be specified for their vocational or prevocational value. The child will almost certainly be provided with a program of physical education for a variety of reasons, not the least of which is that it pleases the President. In mature, affluent, and open societies like our own, he may be provided a good many other opportunities for experiences in self-realization or self-fulfillment.

The generality if not the majesty of Milton's statement is typical in many ways of most of the efforts that have been made to define the purpose or purposes of a curriculum for children, even though Milton was writing of education as a whole and thinking primarily of the age group 12 to 21. Comenius, after agreeing that life in this world is only the "way of life" beyond, reminded parents that "prudent action" here below is a requisite preparation for the next world and hence that "parents must see that their children are exercised not only in faith and godliness but also in the moral sciences, the liberal arts, and in other necessary things. Thereby, when grown up, children may become truly men wisely managing their own affairs in the various functions of life, religious or political, civil or social, that God wills them to fulfill."[36] Locke was content to echo Juvenal: "A sound mind in a sound body is a short but full description of a happy state in this world."[37] About as far as he felt it necessary to go beyond this was to list "four things" that a gentleman might desire for his son: "virtue, wisdom, breeding, and learning."[38]

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[34] *Multi-Age Grouping: Enriching the Learning Environment.* Washington, D.C.: Department of Elementary-Kindergarten-Nursery Education, National Education Association, 1968.

[35] John Milton. *Complete Poetry and Selected Prose.* New York: Modern Library, 1950. p. 667.

Rousseau, foregoing concern for purpose as having already been adequately treated in the literature on education and declaring instead for the primacy of method, does come on strong for the free and universal man whose goal is "to be himself, and always at one with himself."[39] Yet the curriculum as content was of less importance toward the realization of this end than the curriculum as method.

Pestalozzi was caught up in the conviction of the late eighteenth century that education is a good in itself. In his first widely popular book, the romance *Leonard and Gertrude* (1781), he built his tale around the redemption of a backward village by the school. The schoolmaster tells the Duke, who comes to view what will become a model for his state, that it was Gertrude through her infant school who first made the townspeople "orderly and industrious" and who pointed the way for the new education of older children and youth.[40]

In more recent times, the fuller statements of purpose have often been directed at the education of older children and youth rather than specifically at the curriculum for children. Spencer's classic definition is an example. "How to live? that is the essential question for us," he states in the familiar general fashion in "What Knowledge Is of Most Worth?"[41] And then he lists his five "leading kinds of activity which constitute human life," those that directly minister to self-preservation, those that do so indirectly, those having to do with rearing the young, those to do with social and political relations, and those that belong to the miscellany of leisure pursuits "devoted to the gratification of the taste and feelings." It is only in this last category, with which Spencer himself had frankly little patience, that he touches directly upon the curriculum for children.[42]

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[36] Comenius. *The School of Infancy, op. cit.*, pp. 64-65.

[37] John Locke. *Some Thoughts Concerning Education.* Abridged and edited by G. W. Garforth. Woodbury, New York: Barron's Educational Series, 1964. p. 25.

[38] *Ibid.*, p. 122.

[39] Rousseau, *op. cit.*, p. 8.

[40] John Henry Pestalozzi. *Leonard and Gertrude.* Translated and abridged by Eva Channing. Boston: D. C. Heath & Company, 1885. p. 180.

[41] Kazamias, *op. cit.*, p. 125.

What we have historically is the habit of assuming that the purposes of elementary education are largely self-evident. Thus, we must conclude our list of major elements in curriculum making for children with the one element that we might have wished to place first.

Evidence of New Concern for Purpose

Can we say that there is emerging any evidence of new concern for purpose in curriculum making for children? We continue to have some outcry that the fragmentation of the program resulting from the redevelopment of the disciplines and the movement toward specialization in teaching interferes with the wholeness of an approach to learning. But the relentless pressure toward generality of purpose at all levels, not in the elementary school alone, is nowhere better expressed than in the last widely noticed statement issued by the Educational Policies Commission, *The Central Purpose of American Education,* which declared:

> The purpose which runs through and strengthens all other educational purposes—the common thread of education—is the development of the ability to think.[43]

After such a subsumption of purposes under the ultimate generality of developing "the rational powers," it is not surprising to find that the Commission has since gone out of business.

Today we would have to agree that proposals for reconstruction of the curriculum toward any given set of larger ends are few and far between at any level.

The study of man. We could have expected that the reworking of the social studies might have led to some effort to propose relevance for content beyond whether it served to define the structure of the neglected disciplines. In fact, however, the internal and logical ordering of the separate fields and the special pleading for putting one or another of the newly defined disciplines at the center instead of history or geography seem to have exhausted the energies of most persons in the field.

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[42] *Ibid.*, p. 126.

[43] Educational Policies Commission. *The Central Purpose of American Education.* Washington, D.C.: the Commission, National Education Association, 1961. p. 12.

One exception should be noted. Educational Services, Inc. (now the Education Development Center), has named its new program "Man: A Course of Study" and the co-director of the program, Jerome S. Bruner, has written magnificently of its intent to answer these three questions:

1. What is human about human beings?
2. How did they get that way?
3. How can they be made more so? [44]

This begins to sound hopeful.

Rebirth of community school concept. Yet the most promising development for the revitalization of purpose in American education at the moment would seem to come from the revival of the community school concept. The demand for decentralization of schools, and the inclusion of authority for curriculum making among the matters over which local control is to be exerted, while its virtues may be obscured for many persons in central offices and in the schools generally by the atmosphere of militancy in which it is taking place, would seem likely to reopen the question of relating the content of school studies to larger social, economic, and political purposes. More seems to be at stake here than doing well in school or developing rational powers or even learning what it takes for man to become more human.

In summary, this paper has been an attempt to set the scene for the other contributions to *A Curriculum for Children* by defining a number of enduring elements in curriculum making at this level—the primacy of child development as the base; the overwhelming emphasis on method as at least half the battle in teaching children what they need to know and, indeed, as a very important bearer of learnings in itself; the long established will to determine content fully and perhaps finally by inspiration and logic of one kind or another; the ever-recurring concern for unification or integration of experiences in the education of children; and finally the problem of keeping purpose alive at a level where helping the beginner take the first steps in everything has often seemed enough to ask of the schools. An addendum to the treatment of each of these elements has sought to offer a few, perhaps token, evidences of challenge to and concern over the survival of these threads in curriculum making for children.

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[44] Jerome S. Bruner. "Man: A Course of Study." In: *ESI Quarterly Report* 3: 85-95; Summer-Fall 1965. p. 85.

The next section reviews the current scene in terms of what is going on in elementary curriculum, educational technology, value definition, and the reshaping of the neighborhood school. From these papers, readers gain a sense of conditions as they now are.

The third section presents three papers that look ahead. What could a curriculum for children really amount to if we were to be as resolute and imaginative as we might be?

What those of us who have planned this collection of papers have hoped for is that it will inspire its readers to assess and sharpen their convictions about the ends of elementary education—and that in consequence they will find themselves renewed in their commitment to the very difficult task of meeting more fully the challenge of our society to build a much better curriculum for all our children.

The Scene

What Is Going On in Elementary Curriculum Development

Harold D. Drummond

THE invitation to write this paper stated, in part, "We would like you to review current major curriculum innovations for children, such as the Oakleaf School, Nova, IBM at Stanford, Head Start, and Follow Through. You should focus upon information about new programs and an assessment of their direction and promise." In May 1967 that sounded like a marvelous way for me to do some learning that I needed to do—to catch up a bit on what was happening around me—to bring together in some coherent way a report of developments and some interpretation thereof.

My problem in presenting the paper is perhaps well illustrated by these words from Henry David Thoreau's *Walden:*

> If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music which he hears, however measured or far away.

There are days when I think I am getting old—especially days when I read about the latest organizational scheme for solving all the problems of educating youngsters—but perhaps it is just that I am hearing a different drummer. Those of you tuned to another drum may outpace me. So be it. Let us get on with the music.

In order to obtain some opinions about what is happening on the current scene, I wrote to a number of my friends in education, asking for their observations. Following are some examples of statements by these observers of American education:

One wrote: "My travels have uncovered nothing especially new or exciting in the elementary curriculum. There is much talk now about ideas born a number of years ago and especially about such administrative devices as team teaching, ungrading and other multi-leveling, departmentalization, and ability grouping by classes. . . .

"I have heard and read several young psychologists and sociologists and even a few young mathematics and science educators coming forth with Progressive Education ideas from the 1930's without knowing that they were doing so. The 'whole child' concept, concern for children's interests, the environmental spiral, learning through games, construction, and other overt activities are all born anew."

Another reported: "What's going on is not always good in my judgment: there is intensive departmentalization on a large scale. The lushness of government funds has made it possible for many schools to buy more of the hardware that didn't work out in the first place. The crying need for all of our youngsters is to help them appreciate what it means to have a political system that is built on law and order."

Another has written: "There have been only a few great watersheds in history. Two of these mountainous divisions separating an outmoded past from a suddenly altered future were the development of printing and the onset of the Industrial Revolution. Mass media and cybernetics made the mid-twentieth century a third great watershed. . . .

"Let us demonize neither change nor machinery; let us recognize reality. We cannot change the history of education's collision with the future, but we can conceptualize and build better programs of instruction as we digest the meaning of new opportunities and responsibilities."

Another wrote: "What's going on? Ignorance. Confusion. Lots of noise in the system: innovations, new materials, BIG projects, ballyhoo, publicity, *ad nauseum.* But no attachment to history. In all this babel, our confusion assures random choice (what is new this week?), trivial procedures (ability grouping), communication failures (with colleagues *and* parents *and* children), and the prospect of a new wave of public outcry. Can we beat them? The days are surely numbered."

Still another replied: "People are so interested in various ways of organizing pupil groups that they merely let the curriculum itself adapt to the organizational patterns. I'm all *for* the real experimentation; but it grieves me to see people placing so much faith in new names for the same old patterns, which are sometimes backward trends."

Another wrote: "One of the most controversial innovations in elementary curriculum that has hit . . . seems to be the introduction of the American Association for the Advancement of Science teaching materials for the elementary grades.

"Another development of considerable interest is the increasing use of formalized techniques for teaching visual perception skills and concepts in the preschool and early grades. . . ."

Another commented as follows: "Last year I searched for a sound nongraded team teaching situation at the elementary level. Most of the situations were not exactly innovative. In some ways they were much worse because the child was placed in a greater straitjacket in the so-called nongraded program—and instead of the traditional six grades one would find 18 grades; the most rigid was one in which there were 36 different levels. . . . Equally disappointing was team teaching, in which I found very little of true team planning; instead it was a reversion to the old departmentalized school.

"However, on the positive side there was one school in Tampa, Florida (Ballast Point) in which a rather large faculty of 37 teachers with an insightful principal had developed a nongraded and more purely team teaching situation than anything else that I saw. For two years this faculty studied nongraded schools and team teaching. At the end of these two years they were more certain of what they would not do than what they would."

Another observer said: "So far I cannot see that the dialogue that has recently been going on has actually affected too much the content of the elementary school curriculum. The major revolution probably has been in the area of mathematics. A great deal of attention is being given to science, mostly because of the efforts of the National Science Teachers Association and the American Association for the Advancement of Science. Incidentally, the argument between these two organized groups has not as yet been resolved.

"The language arts program is anxiously awaiting the day when the persons who are genuinely concerned with linguistics decide what difference this is going to make in the usual language arts program in the elementary school. . . . There is a demand on the part of persons in the social sciences for greater influence upon the nature of the social studies program. We see people who are talking about an anthropology-centered curriculum, a history-centered curriculum, a geography-centered curriculum, and so forth. Intelligent merger of these does not seem to be very seriously discussed."

Still another wrote: "There are a great many exciting things going on, potentially so at least. I have in mind such things as the Cleveland Research Council's effort to develop a new program in the social studies for the elementary school; the continuing work of several groups such as Professor Karplus' group at Berkeley and the Educational Services Incorporated (ESI) group on the East coast to produce newly conceived curricula in science for the elementary school; the impact of the linguists and the field of linguistics on language study; the continuing efforts to modernize mathematics for the elementary school."

Another friend wrote: "There is a marked transition from in-service work, where local teachers develop a curriculum, to the acceptance of national curriculum programs. While at first glance this can be frightening, perhaps local systems can achieve the same goals they used to attempt to achieve through in-service work by working with teachers to develop skills in adapting curriculum as developed by experts."

Another reported: "Our most exciting and significant elementary curriculum developments have been in the preparation and field testing of materials for different substantive fields by teachers, and in the testing of the thesis that early, continuous educational stimulation of children from ages 3-12 results in noteworthy achievement for the slow, average, and fast learner."

Another wrote: "It appears to me that three phrases best describe the situation today—'fumbling,' 'grasping for a straw,' and 'confusion.' With funds from Title I, there is a profusion of special teachers descending upon classrooms. In one school where I worked the teachers wanted to know when they would have time to teach."

And finally, after listing about 20 different projects now in process in the area which ranged all the way from a mobile planetarium, outdoor education, sex education, to audio-books for children and Initial Teaching Alphabet, a friend in teacher education wrote: "I think I should write a book or an article on the Disappearing Elementary Classroom Teacher. I'm teaching students for yesterday."

National Planning and Big Money: Still Here

These observations from friends, my own reading, and forays into the real world of elementary schools lead me to make the following generalizations, my discussion of which is occasionally interspersed with examples of what seems to be going on.

- *The influence of national curriculum programs is being felt.*

The areas which were funded first (with the exception of foreign languages, which seem again to be slipping from favor) have felt the greatest impact of national curriculum programs. Before long, the new social studies will be available, and probably in time the new language arts.

What effect have these programs had on the curriculum? As with any major new development, I suspect, an honest answer would have to be that they have been a mixed blessing. Many school districts adopted a new math program without subjecting the new material and system to careful study and analysis. (Of course, they had not subjected the old material to study and analysis either, so I suspect we should not expect miracles to happen.)

Which system adopted which materials was frequently determined by the most effective sales pitch. Many systems, having adopted a new program, did little to help teachers become acquainted with the new material—and there was a considerable period, not wholly behind us, of frustration, trial and error, and disillusionment. The worst of that initial shock and fumbling is now over in mathematics—until the new, new mathematics really makes an impact. The worst is still ahead in science, social studies, and the language arts.

Will we have learned enough from the mathematics experience to move into other new programs with less trauma? It will be interesting to see. We surely must have learned the necessity for teacher reeducation prior to the start of major curriculum revisions in any substantive area which the teachers have not shared in developing. We must have learned that some adaptation of materials and programs developed elsewhere may be necessary for the particular population served in a school. If we are responsive at all to our experiences, we surely know that parent education is a crucial factor before and during major changes of programs.

In this world of rapidly expanding knowledge, the "new" programs will soon be out of date, too. Before settling back to relax and rest after the successful establishment of any new program, remember that the adopted program itself is likely to be vastly different within a short time. Any good curriculum program today has built into it feedback from users, provisions for almost constant revision, and application of the latest knowledge from research completed on university campuses, in regional laboratories, and by the industrial complexes. The point, I believe, has been made sufficiently. National curriculum programs, most of which started from a substantive base, are now a major force in curriculum development and change.

- *Big money is being spent on education today, and over a period of time money will make some differences.*

The truly big money is being spent by what J. Harlan Shores calls the "federal government-industry" complex. He has stated recently his own convictions about what is likely to happen:

> Not knowing just what faces us when the combined forces of big industry and government make education their business as well as ours, strong fears of the unknown are likely to dominate our thinking. We like our jobs now. Will we like them as well under these new conditions? . . . Will we become puppets on this new educational stage? How can we keep it from happening? If it is bound to happen, how can we keep our worst fears of a robot-like dehumanized program from becoming realities?
>
> Without denying the reality of these fears and apprehensions or even the possibility that some of them may become facts, it is much more sensible, I think, to dwell on the hope in this new industrial revolution in education. Industries can help us to educate more efficiently. Let's help them to produce innovations that are really useful (22).

The evidence is not clear yet, it seems to me, that the infusion of big money will "help us to educate more efficiently," to use Shores' words, but the potential is certainly there if the money is spent wisely. What bothers my Scottish ancestors and their offspring (me) is the overselling of barely developed hardware and its related software that has resulted from the new federal programs. I suspect that as soon as we get knee-deep in gadgets, we shall start asking consistently some of the harder questions—and there are evidences around that at least some of the big money is beginning to be spent just that way.

Elementary school libraries are at last a reality most places in this land. They are not yet adequately staffed, but they will be. They are not open after school hours, weekends, and summers except in areas designated for poverty funds—but they will be. They are not yet, in many places, good learning resource centers but rather are mainly depositories of trade books—but that, too, is changing.

Kindergartens are a reality at last in most areas of the country. I happen to live in a frontier state where support for kindergartens locally or at the state level still has not been approved—but we have a lot of kindergartens now because of the high proportion of Spanish-American and Indian-American youngsters in many communities and because of the availability of federal funds through Title I. Already parents of the other children are saying, "Why can't we have public school kindergartens for our children, too?" Programs for four-year-olds are growing elsewhere in the nation, and before long they, too, will be common.

Some kindergarten programs that have been established because of available funds, but without effective staffing, may be almost as bad as no kindergarten at all. Too many I have seen seem to be providing a watered-down first-grade curriculum, which itself needed to be changed markedly. Too many are a sit-still-and-listen program or a now-is-the-time-to-skip-to-the-record program.

I happen not to agree with the "no nonsense preschool" recently described in *Life* magazine as existing at the University of Illinois. The description indicated that the children are "drilled relentlessly in math and language. Their teachers demand responses in unison, accept no excuses, require complete sentences each time a question is asked or answered" (25). According to the article, Siegfried Engelmann, one of the two persons mentioned by name, said: "Discovery-oriented learning is phony learning. One child is learning and five aren't. Our system is more rigid and more structured. The kids are hollered at and praised."

There is nothing very novel about this procedure for educating young children—except reporting it! I have been in hundreds of classrooms over a span of 20 years where the exact process described has been practiced. I have been quoted enough times to know that what is said or done may be very different from what appears in print—so I give the gentlemen in question (Carl

Bereiter is also quoted) my sympathy if the report is not accurate. And I would freely admit that with some children, in some situations, occasionally, a program such as described might be useful—at least experimentally.[1] There is a tremendous gap between what now is known about how children learn, however, and that particular report of what is going on. Thankfully, there are trials of other kinds—and thinking of them brings me to my third generalization.

Major Current Focus: The Individual Learner

● *At last, the individual learner is becoming the focus for some efforts.*

We have talked about the unique nature of individuals since Terman's day, without truly being able to do much about it except in human relationships. There were good reasons: materials were few and costly, teachers were not well-educated persons, space and numbers practically dictated group approaches to instruction. A little at a time everywhere, and quite rapidly in a few places, other conditions have been created. I wish that I could report on the basis of observation about some of the most intriguing developments in individualization that are now going on—but the Council responsible for asking me to write this paper did not provide simultaneously with the invitation a month of visiting time and a travel budget. Consequently, instead of being able to see these schools, as some of my readers have, I am going to have to describe briefly several of the attempts which have been reported.

IBM INSTRUCTION IN PALO ALTO, CALIFORNIA. Last year Patrick Suppes and Richard Atkinson provided all instruction in arithmetic by computer for one-half of the first-graders in Brentwood School in Palo Alto and most instruction in reading by computer for the other half. The Brentwood School had 18 terminals—or places for 18 students at a time to receive instruction assisted by the computer. Of course, the 18 stations were used by several different children during each day. The cost of buying the hard ware and preparing the first-grade programs in these two areas was reported to be about $1.5 million, which is slightly greater support than the national average!

The previous year at Grant School in Palo Alto, it was reported that the computer "broke down an average of 100 minutes a day" (4). That must have been highly frustrating to the experimenters to say nothing of the staff and the learners. Such failures were cut gradually, at Brentwood School, to about seven minutes a day, according to the same report.

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[1] For a more detailed description of the program, see: Carl Bereiter and Siegfried Engelmann. *Teaching Disadvantaged in the Preschool.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966.

This year, the same experiment now encompasses some 32 schools including some in Kentucky and Mississippi by long distance telephone line. We know that even commercial television with its many years of trial and error—and its consistent technological improvement—still occasionally runs into transmission difficulties. I would be surprised to learn that the computer-assisted program has consistently gone smoothly as distances from the computers have been extended.

But the crucial part of this story is *not* the difficulties inherent in the hardware but rather the conceptions behind the program planning for computer-assisted instruction. Suppes has described the heart of the process in teaching arithmetic in the Palo Alto project as follows:

> We divided curriculum for each of the grades . . . into concept blocks and each of these concept blocks was presented for between four and ten days. All students began each concept block at the middle level of difficulty. On subsequent days they moved up or down, depending upon their performance levels. Drills on five different levels of difficulty were available. The student found his own level of difficulty, which could vary over the course of the concept block, depending upon his performance. . . .
>
> During the current academic year (1966-67) we are striving for a still deeper level of individualization. In addition to the five levels of difficulty on a concept block, approximately 30 percent of the work is devoted to review of past concept blocks. We keep a running score of the student's work for the entire year and continually review his weakest areas of competence. The same five levels of difficulty are used in the review of the concept block on which the student's past performance was the worst. . . .
>
> The preliminary evidence from 1965-66 is that such a program leads to specific improvements in performance on arithmetic-achievement tests as compared to the performance of control groups. This is no surprise. It only confirms research, running back many years, that regular exercises to provide practice on basic skills and concepts will improve long-term performance in arithmetic.
>
> The computer provides a standardized and regular way of doing this on an individual basis, tailored to the needs of each student. In principle, such a program could be put into practice by a teacher. But in fact, the elementary-school teacher already has too many re-

sponsibilities in too many areas to provide such a daily individualized program (23).

I have not yet had a chance to see this program in action. I am unconvinced, as yet, that a computer can ever tune in to "the needs of each student," to use Dr. Suppes' words, as effectively as a warm, bright human being—but the direction of this development, it seems to me, is wholesome. We have not previously learned how to individualize skill development effectively. IBM is reported to have invested as of a year ago $30 million in research and development for computer-assisted instruction. With other companies also very active in both hardware and software development—anticipating the day when the Vietnam conflict is over and the truly *big money* can be directed to the solution of such problems—it seems likely that within a few years portions of a school day will be spent by a child at a computer console.

OAKLEAF SCHOOL, PITTSBURGH, PENNSYLVANIA. Some readers may already be familiar with the work of Oakleaf School in Pittsburgh. Not having visited Oakleaf, I have had to rely again on the reports of others (17). This school is attempting to individualize almost completely the instruction provided in reading, arithmetic, and science. Extensive record-keeping procedures had to be created; clerks or aides to correct the written material, which the program is largely based upon, had to be employed and trained; and the teacher's role—serving as the human computer to look at the level of work just achieved and assign the next dose—had to be defined carefully.

I will be especially interested to see any new reports about how the Oakleaf School may have changed its program this year. According to verbal reports I have had, achievement at the Oakleaf School last year was not as good as had been hoped—in fact, not quite up to what might have been accomplished under more standard classroom practices. That finding is of interest, but it probably indicates more than anything that many of the commercially prepared materials which were utilized simply were not appropriate for the learning goals set. When used by a classroom teacher, with discussion, the inadequacies of materials can be partly overcome. When individual approaches are utilized, the materials had better be truly excellent.

As in the case of the Suppes program, the Oakleaf experiment, it seems to me, represents a real attempt to *do* something about individualization of instruction. It is a different approach, and that is all to the good at this stage in our fumbling toward the future. As the staff members there demand and get better materials to use, as they develop many materials themselves, and as they learn how better to balance this approach with others and to control motivational factors more effectively, progress will occur. I am glad they are truly trying, and I hope they keep at it. I am particularly interested in finding out more about how they are attempting to provide a balanced program for youngsters.

EDUCATION ADVANCEMENT CENTER, ALBUQUERQUE, NEW MEXICO. Truly in its infancy, the Education Advancement Center of the Westinghouse Learning Corporation, located in Albuquerque, is attempting to control more effectively what seems to be lacking in the descriptions I have seen of the Oakleaf School. At present, most of the youngsters taking advantage of the opportunity are remedial cases, but there seems to be no reason that the techniques would not be appropriate for regular instruction.

The Center defines its approach as follows:

> When a student enrolls, he is given a battery of nationally standardized achievement tests to determine his entering grade level in each subject. Analysis of test results provides a basis for a diagnosis of his deficiencies, and an individualized course of study is prescribed.
>
> The teaching materials utilized are self-instructional, drawn from a wide range of commercially available materials, as well as special programmed courses developed by the Westinghouse Learning Corporation staff specifically for the Education Advancement Center. Utilizing this tailored curriculum, created to meet his individual "prescription," the student proceeds at his own pace. Progress is evaluated on a daily basis by the classroom manager, with bi-weekly reports sent to parents. On request, copies of evaluation reports are sent to the student's school teachers.
>
> A vital element of the . . . model is the recognition that motivation is of utmost importance in all areas of education. No matter how well-conceived, organized, and educationally sound a presentation may be, students will learn nothing from it unless they attend and respond. Yet, until recently, there existed no formal method of reliably producing student motivation.
>
> Such a method for "energizing" the student to learn has been developed by the Albuquerque research staff of Westinghouse Learning Corporation under the direction of Lloyd Homme. Simply stated, it is an "instant reward" system in which the student agrees to do a certain amount of prescribed work, after which he is allowed to participate in a more preferred activity.
>
> The physical setup of the Education Advancement Center is keyed

to this motivational system. Instructional activities take place in a "task area," a classroom specially designed for individualized study. The rewards are administered in the RE (Reinforcing Event) area, where students get their "breaks" in the form of games, relaxation, and social activity.

Each day the student literally "signs a contract" to do a specific amount of work in return for an appropriate amount of reward time. He must complete each segment of his work satisfactorily before he enters the RE area. His motivation to learn is built in through self-scheduling and through his expectation that academic accomplishments will be rewarded on a step-by-step basis.

The value of this individualized instruction is not only in the learning and understanding of information. The student actually learns how to discipline his time, follow directions, use information and, in general, develop and rely on his own abilities.

At the completion of his program of study at the Education Advancement Center, the student's overall progress is evaluated through the results of nationally standardized achievement tests. If he has not attained at least a one-year grade gain, he pays Westinghouse nothing (7).

If the student has achieved such a gain, he pays $100—and the time involved is two hours a day, three days a week, for from 10 to 13 weeks. This attempt to control motivational factors through what the psychologists call "contingency management" seems to me to open tremendous possibilities for the future.

We have known for a long while that the motivated children are the ones who learn. We may know before long how to motivate almost all of them, through self-scheduling under the guidance of an interested and concerned adult and through instant, fairly tangible rewards.

THE NOVA SCHOOLS, BROWARD COUNTY, FLORIDA. The Nova Schools of Broward County, Florida, run from kindergarten through junior college and are public demonstration centers. A privately supported university has recently been added to the system. The schools were designed and built to support a program of "continuous progress." A major effort has been made to design a series of learning experiences within each discipline to ensure continuity in structure and sophistication. In each subject area (described for elementary levels as including reading, science, mathematics, social studies, and foreign language), "a series of content units were designed through which each student could seek a greater amount of self-direction for his own learning."

These "content packages" have been revised several times and now are reported to include:

> . . . a series of behavior goals; instruments for self-assessment and teacher evaluation; application of experiences practically and theoretically; and methods for recycling and programming of resource activities. Thus, the content units became Nova Learning Activity Packages. . . .
>
> The inclusion of the additional characteristics required the development of a flow-chart as a guide in the planning and writing of the activity package. . . . The chart illustrates not only the general design for the arrangement of learning activities but possible avenues by which students may direct their interests to avoid duplication and movement for greater efficiency in learning. The teacher and student by mutual understanding and agreement can direct their efforts and interests in a harmonious manner to achieve predetermined behavioral goals (27).

One aspect of the Nova School curriculum which merits a special word is the fully-equipped Practical Arts Lab which "provides practical training for students at all age and learning levels" (28). Although this is certainly not new in American education (Los Alamos, New Mexico, schools have had such experiences for elementary school children since the late '40's), I am pleased that a demonstration center is focusing some attention upon the great need the next generation will have to learn how to work creatively and effectively with their hands.

The elementary schools at Nova are described as nongraded. The school operates on a trimester schedule (210 days). A "completely equipped *lab, plant and animal rooms, and gardens* (italics in original) serve the science program. Extensive use of machines and printed materials is made in the instruction of all other areas of learning" (28).

No mention is made anywhere in the literature I have seen about the Nova Schools that music is an essential part of living, too. The "humanities" are mentioned at the high school level. It is not clear to me what the provisions are at Nova for musical learnings, and what is done to help youngsters learn to work effectively with others.

As with the other experimental programs which have been briefly described, *what they are doing* as of this moment at the Nova Schools seems to me not to be nearly as significant as *that they are making an effort,* and in a public school setting. If they can keep sufficiently flexible, if they can prevent crystallization and the acceptance of present levels of accomplishment as ideal, if they can maintain some of the zest and willingness to try which seems to be a part of present efforts, undoubtedly the Nova Schools will make a significant impact upon schools throughout Broward County and elsewhere. Investment of public money in such endeavors (although, again, I must indicate I have not seen what they are doing) seems to me to be wise.

Changes Few and Mostly Organizational

● *As far as most public elementary schools are concerned (and I could include private ones as well), few changes have yet occurred—and they have been largely organizational in nature.*

Ralph Tyler was quoted recently as saying: "So far we have only been tinkering with administrative arrangements in our efforts to achieve more effective learning" (19). Most of us, I suspect, would agree. We have extended the educational program to include young children (at least in poverty areas), we have increased the utilization of audio and visual aids to learning, we have verbally professed the need for more flexibility (and usually ended up with less), we have changed building design so that group size can be (but rarely seems to be) a function of the activity which is planned. We have added specialists (although not nearly enough guidance personnel to help youngsters truly understand themselves).

There are other developments which, perhaps, should be noted briefly, such as: (a) I/D/E/A (Institute for Development of Educational Activities), which has four arms: a division of research and development, a division of innovation and demonstration, a division of information services, and an educational grants division; (b) the growing emphasis on simulation, games, and role playing as instructional techniques which require and get more active involvement from the learners; (c) PLAN (A Program for Learning in Accordance with Needs) which is a joint venture of the Center for Research and Evaluation in Applications of Technology in Education, Westinghouse Learning Corporation, and fourteen school districts in five states (California, Massachusetts, New York, Pennsylvania, and West Virginia); (d) many useful local innovations through Title I or Title III funding which have promise, such as the use of a warehouse in Cleveland, Ohio, as a supplementary education center where 7,000 sixth-graders spend four days a year in an art gallery, viewing community heritage and science exhibits, and participating in art and music; and (e) Follow Through, an attempt this year under the Office of Economic Opportunity in 30 school districts which had Head Start programs to extend the special services (health, food) and the teaching techniques (parent-involvement, freedom to learn through activity and real firsthand experiences) upward through kindergarten and eventually to at least the fourth grade.

We still must admit that we have some major failures—and that most of what has been described as promising may not help us much to overcome these failures in the foreseeable future. The major failure of American education is, of course, the major failure of American culture—the inner city. We still are a long way from helping youngsters from vast sections of our major cities become a part of the majority culture. We still are a long way, too, from helping our rural youngsters—especially those who also are from a minority ethnic group—learn the skills and develop the values which will enable them to break the cycle of poverty into which they are born.

We still have not found ways of dealing effectively with what Kimball Wiles called the "forgotten 30 percent"—those who are quite able to learn, but who seem to need something different from the other 70 percent. We still have not learned much about how we help the next generation build for themselves values worth living by, including respect for law and order and the use of reason and cooperation in solving problems.

What Will the Future Be Like?

William Hedges, in a stimulating recent article, asks the question: "Will We Recognize Tomorrow's Elementary School?" (12) and answers his question with a resounding "No!" He predicts that much of what is now being attempted through computer-assisted instruction will result in most of that kind of learning being done *at home*—and that school will become primarily a place for interaction—a place for discussions, sports, music, drama, debate—and, I would add, stimulation. He sees many more diagnostic services being centered at the school and much more consideration for emotional and physical well-being. I tend to agree, long-range, with his forecasts.

For the immediate future (five to ten years) I would expect the following:

1. Money for education will be provided at the level of support now provided the Department of Defense. In my judgment, there is likely to be a corresponding decrease in expenditures for the military. We are learning—although we seem to be slow learners—that military solutions to human problems do not exist; and that modern weapons for killing, when utilized by nations, create more human problems than they solve. As a people, we will soon put a major portion of our resources to work to conquer the ancient enemies: ignorance, poverty, disease. In this effort, schools and health agencies will combine their efforts (as in Head Start and Follow Through) for all children.

2. As a result of the vast sums of money available, pressures will mount to adopt sure-cure, largely untested new programs. Salesmen representing the cartels of the federal-industrial complex will be descending upon all curriculum workers, supported by myriad reports to the people through the television industry, which is part and parcel of the complex; the magazines, also owned and operated by the same firms; and the newspapers, which are sensitive to the power of these cartels and which are looking for copy. Claims will approximate those made for the magic potions sold from the back of medicine-show wagons a few generations ago.

3. Truly competent curriculum development staffs will be standard in every major city and in every state department of education—and they will be given the time and the resources to study new products, new packages, new proposals. They will, in turn, recommend adaptations of commercially produced curriculum materials, create programs of their own which will utilize commercially produced and locally produced materials and techniques, and continually attempt to seek ways of providing better *balance*—something which the special interest groups will not and cannot do. Teachers will serve in such positions for a year or two, and then return to teaching posts with new insights.

4. A major focus of concern and real effort will be expended on *personal development*. We will in the next few years—from sheer necessity as well as deep conviction—focus much more attention and concern on interpersonal relationships, on stimulation of interests, on development of values to live by, on citizenship education, on emotional and physical health, on creativity.

We will seek ways of more effectively helping youngsters, as Muriel Crosby recently put it, "search for the meaning of life":

> Behind the facade of timidity and shyness, boldness and aggressiveness, apathy or eagerness. . . . are . . . youngsters who are . . . [asking] questions all people have asked from the beginning of time:
>
> Who am I?
>
> What is my purpose in life?
>
> What am I capable of?
>
> What does life hold for me?
>
> Our children are asking us . . . to help them find their own answers. If we are successful, we will find our own purpose in being, our own answers to the meaning life holds for us (5).

5. We will be developing a *total* curriculum which has relevance, excitement, vitality for every child (2); which is different for every child and different in every school. It will be a program geared to specific behavioral changes clearly delineated for each learner based upon effective diagnosis and knowledge of performance. The learning will be provided in situations which are truly desegregated on the bases of race, sex, economic status, age, ability, and social classes (3).

Much of the educational program will be geared to the solution of human problems. It will start in the prenatal period, with the education of parents, and continue throughout life. The Parent and Child Centers starting under the Office of Economic Opportunity in poverty neighborhoods will become accepted in every neighborhood; and Follow Through will be commonplace. The community school, with a focus on the development of a true community in which learners young and old discover who they are, will become a reality, whether the school be at Rough Rock, Arizona (9), or the El Rancho Unified District in Los Angeles (1). Within ten years the old foolishness of pass-fail, or A,B,C,D,F, or H.S.U. will have vanished, at last! Schools will be for children (and adults) and teachers will see their role as making a difference in the life of every child (learner) (24).

In the immediate period ahead, we will be asking ourselves and the parents of the children—more clearly, more openly, more forthrightly, more courageously—"*What do we want our children to become*? . . . What do we want our children to *value*? What do we want them to be able to *feel and see and hear and smell and touch*? From what do we want them to learn to *get pleasure*? What do we want them to *understand about themselves* and the *world of nature* *and man?* How do we want them to *behave* toward *other human beings?* To what do we want them to be inclined to *commit themselves?* What technical *abilities* do we wish to *cultivate* in them?" (24: p. 30).

The emphasis will be on developing programs for individuals which will help them as they grow up to become mature persons, as described by Menninger (15), who are able:

> To function under difficulty
>
> To accept frustrations with a minimum of stress
>
> To change—to abandon solutions learned in childhood
>
> To resist disabling symptoms produced by tensions and anxieties
>
> To find more satisfaction in giving than in receiving—a reversal of the infant role
>
> To get along with others
>
> To control our instinctive tendency to hate and to direct hostile energy into constructive outlets
>
> To love.

6. And finally, I would expect some marvelous changes to occur—and soon—for there is a new spirit of optimism, of challenge, of vibrancy, of hope, alive in education-land. Fred Wilhelms caught this dramatically in a recent article entitled "A New Progressive Education?" in which he wrote:

> The whole thing [a protest against "Progressive Education"] came to a climax in 1957 when the Russians sent up the first Sputnik. Its shock wave sent the American people rushing for "excellence" in the schools, and it caught them just when their ideal of excellence was one of pure, cold intellectual mastery. The federal government moved in with the National Defense Education Act of 1958. It virtually declared that what was important was mathematics, science, and foreign language. . . .
>
> The "scholars" moved in from the universities to reform programs. . . . And this nation was launched on a tremendous drive toward new standards of intellectual rigor.
>
> But then a funny thing happened to the scholars on their way to the schoolhouse. Probably most of them had got into the game to raise the intellectual standards and speed up the pace. They distrusted us—the professional educators; they were contemptuous of all the talk about "methods"; and a lot of them would have sneered at the "whole child" line as mere sentimentality. But they were good men as well as smart ones, and they learned fast when they hit reality. Suddenly, they began talking so much like the progressives that I worried for their

> futures. They decried "mere drill and manipulation" in arithmetic and argued for understanding of the big ideas. They mixed various mathematical disciplines together. They talked about the "discovery method" and the spirit of inquiry. They advocated putting more and more responsibility in the child's hands for independent work. They went in for a lot of freedom to follow problems wherever they might go. And they were flatly against any attempt at total "coverage" of a field. . . .
>
> . . . In 1964, Congress revised NDEA to include practically all subjects. Compare that to the 1958 version and you see one of the most dramatic about-faces any great nation ever made in six years (26: p. 32).

And so we are here—in the reality of the present. The millenium has not arrived—I doubt very much that it ever will. Yet there is a new vigor in education apparent throughout the land—one which says in essence, again, children are important; learning should be interesting; learning how to think is more crucial than regurgitation; play is a significant part of childhood; and we want our children to grow up as well-balanced, broadly interested, deeply committed, healthy individuals who are capable of interacting effectively with others.

To me, the present has some of the magic possibilities and vistas of the early '30's. I hope we will be mature enough to participate effectively in changing the curriculum so that the next generation of Americans will be more humane and more able than we.

What drummer have you heard?

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What Is Here in Educational Technology

Harold E. Wigren

THE never-ending procession of new materials and media in education continues with more vigor than ever. In fact, the parade seems to be picking up momentum and getting greater. Some of these newer developments are present and available for use now; others are in the experimental stages; still others are on the drawing board. Some are in black and white; some in color. Some are simple to use; others complicated. Some are inexpensive; others are costly.

Each of these new resources for teaching and learning must be examined from the point of view of its unique usefulness in achieving instructional objectives. Increasingly, it is important that we look upon the products of the new technology as tools for solving problems—as implementers rather than as invaders of our educational programs. Effective use recognizes that media cannot stand alone. They are best used when combined with other learning resources and integrated into the fabric of the curriculum.

What are some of the needs and problems of our schools to which educational technology is now making, or could be making, significant contribution?

Many children live in isolated rural areas where resources and teaching personnel are limited or even nonexistent. Schools in these areas often cannot offer courses in certain subject areas because qualified teachers are lacking or not enough students are enrolled in a given subject to justify employing a teacher. Ghetto schools in large urban areas also face enormous staffing and resource problems. How can educational technology help?

Sharing Limited Resources

Four examples of how technology is helping other countries, as reported by the International Institute for Educational Planning,[1] follow:

In Australia and New Zealand, radio and correspondence study have been combined to teach children who live on isolated ranches or farms in the outback and who could not feasibly be taught in schools. Children now have two-way radio communication with their teacher hundreds of miles away. Wilbur Schramm reports:

> Many tens of thousands of children in these two countries have gone with no difficulty from elementary schooling by radio and correspondence into a residential secondary school. Recently two top scholars in the medical classes at the University of Western Australia were young men who had received all their training up to the university by correspondence and radio.[2]

In Niger, with only 66 fully qualified and certified teachers in the entire country, television is being used to redistribute teaching resources. Some of Niger's best qualified teachers have been chosen to teach the core of the course on television; other teachers serve as *animateurs* or monitors in the classroom and serve as a member of a teaching team.

In Italy, Telescuola offers a complete curriculum for children in the middle school in remote and isolated districts. Viewing centers are set up in two rooms—one with a TV receiver, one without. While one class views the TV lesson, the other practices under the direction of its monitor.

In Colombia, South America, children in isolated areas in the first five grades are being reached through the country's Radiophonic Schools with daily systematic instruction to supplement the work of poorly trained teachers and to equalize educational opportunity between the poorer schools in the village and the wealthier students in private schools.

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Wilbur L. Schramm and others. *The New Media: Memo to Educational Planners*. Paris: UNESCO, 1967.

[2] Wilbur L. Schramm, *op. cit.*, p. 43.

In our country, in addition to TV and radio, teaching by telephone seems to be expanding rapidly. In Topeka, Kansas, teachers have found a way to be in three separate classrooms at the same time through the telelecture system. This technique brings the teacher to the classroom audience via regular telephone lines, enabling the speaker to participate with several classes simultaneously at different locations. The system enables questions to be answered through the use of microphones in the classrooms that are connected to the telelecture network. A telewriting device provides the visual link between the teacher using telelecture and his students. Written notes, formulas, or drawings are transmitted "live" from the teacher's location and projected on a screen in each classroom for his audience.

The Alvord Unified School District in Riverside, California, is starting a dial-a-tape system whereby a student who forgot his homework assignment can dial a number and hear a replay of the teacher giving the assignment. If he gets stumped by the problem, the student can dial another number for further explanation.

In Takoma Park, Maryland, an English class at Montgomery Junior College is meeting many outstanding personalities through telelectures. The conversation between the instructor and the guest lecturer is amplified so that all can hear. This saves travel expense, and it also often means the difference between having actual contact with a person or not having contact with him.

In Northwest Iowa, a telewriter project is under way to improve classroom instruction by helping teachers in their understanding of modern mathematics and methods of presenting it. Recently 535 teachers received instruction in modern mathematics via telephone and electrowriter equipment at seven selected centers. The electrowriter enabled instantaneous reception of written symbols.

At the headquarters of the National Education Association, we now have a telelecture room used by many staff members in speaking to distant groups. The telephone call, including equipment rental, rarely costs more than plane fare for a personal appearance. Feedback from the audience is, of course, a part of the telelecture.

As the technology becomes more and more sophisticated, we will find unimagined opportunities to move information rapidly from one place to another on the earth—not just formal programs but data of all types, both print and nonprint. What will likely develop will be a comprehensive, multi-purpose information network that is at once flexible and interactive. The field of telecommunications—as it is now known—is opening up fantastic new possibilities in the exchange of materials and resources among schools in all parts of the nation and, eventually, the world. The classroom teacher of tomorrow, because of satellite communications, may be able to say with John Wesley, "The world is my parish."

Providing Ready Access to Resources

The greatest breakthrough in recent educational technology has been in retrieval and accessibility of information and materials. This is precisely the point at which education has had the most problems with media in the past. The difficulty of scheduling has all too often made the uses of educational technology regimented and prescriptive. Fortunately, this difficulty is gradually being overcome. New technological breakthroughs are bringing new flexibility to media use.

Television

Closed-circuit TV and Instructional Television Fixed Service (2500 mHz installations) are becoming widely available as complementary systems to broadcast television. Instructional programs of high quality can now be beamed from broadcast ETV stations, picked up off the air at any hour of the day or night, stored on videotape, and played back on closed-circuit or 2500 mHz whenever desired by the local school and in keeping with its own time schedules. A few schools are experimenting with playing these programs back directly on video-tape machines.

"Banks" of stored materials on videotape can thus be developed at each school district level—and eventually at each school level. A multi-channel program service is thus made available to supplement ETV channels in each community. Some districts are using four to six closed-circuit channels and one hopes to experiment next year with 13. Eventually, there will be available 20 to 30 channels for a given school so that materials will be accessible almost instantly.

Videotapes

The Framingham, Massachusetts, public schools are developing short, predetermined videotaped instructional and enrichment presentations (key lectures, demonstrations, guidance talks, experiments, cultural events, nonprogrammatic materials) which will be stored in "banks" and scheduled for viewing or listening at various intervals and through various outlets throughout the schools and community. With a weekly schedule of programs and a catalog of the programs made available to each school, students and teachers will be able to request specific programs to be scheduled for use as needed during a study hall or after school. The system will allow for repeated presentations of learning content of high pertinence.

The tapes would be developed by personnel from cooperating community agencies (state college, hospital, public library, and others) as well as by the public and parochial school staffs, and used interchangeably in and between the various institutions. A local cable television firm will install and maintain—simultaneously with the firm's community-wide commercial cable—a 13-channel, 25-mile-long "school-community loop" at no charge to the community or the schools.

Dial Access

A recent breakthrough in achieving the goal of accessibility of resource materials is the remote-access information retrieval systems technology. Sometimes known as "dial select" or "dial access," the system enables students to select and receive any one of two or more stored programs from a central program bank at a different location from that of the students. The transmission is done electronically by coaxial cable or telephone lines. It is possible that some programs could be transmitted to receivers by microwave, multiplex FM, VHF, or UHF television signals or light waves. In the future, the transmission conceivably might be done by laser beams.

School systems presently using dial access systems are those of Beverly Hills, California; West Hartford, Connecticut; Bedford, Long Island, New York; and Broward County, Florida (Nova High School).

The case of the Beverly Hills Unified School District is a good one to examine. There the experimental information retrieval project, utilizing closed-circuit television, provides automatic presentation of any type of audiovisual material in the classroom or library study carrels merely by dialing a program number. Four elementary school classrooms, five high school rooms, and eight library study carrels in the high school are tied into the system. Individual students have access to motion pictures, filmstrips, slides, taped ETV presentations, records, and any recorded classroom lessons. Carrels are equipped with small TV monitors, a headset, a telephone dial, and an intercom system connected with the school district's information retrieval center. In the study carrel, a student orders from the center the material he wants to view or hear. At a specified time the student dials a predetermined program number, and the material is presented instantly.

At the university level, dial access retrieval systems are in operation at Oral Roberts University in Tulsa; The Ohio State University (Datagram system); and Bucknell University. The largest installation in the nation is at Oklahoma Christian College, with 860 student carrels available—one for each student in the college!

Teaching Tapes

The Norwalk, Connecticut, public schools have developed a variation on the dial access theme. Instead of connecting schools by telephone connections to a remote central recorded library, Norwalk has developed decentralized libraries of tape packages in each school. Each package includes the audio portion of the prerecorded lesson along with correlated printed materials to accompany the lesson, teacher guides, student worksheets, and a diagnostic cross-index catalog of the materials available.

Study carrels, with earphones and tape playback units, have been set up in each participating school. The plan is less expensive than dial access, provides for decentralized libraries of tapes, and provides the teacher with essential information he must have in order to prescribe specific uses of the recorded materials for students.

EVR (Electronic Video Recording)

EVR is the most revolutionary of all the new electronic devices on the educational scene today. It has been prototyped by CBS Laboratories. If it develops as planned, it could well transform our uses of television and films in the classroom. Its features are these: provides flexibility in the use of prerecorded materials, plays back television programs or films, can be stopped at any point, and can play back either color or black and white.

Individualizing Instruction

Individualized instruction is a major focus in educational research today. How can educational technology help with this need?

At the heart of individualization of instruction is programmed learning—material organized in a logical manner with frequent testing of the concept presented. The greatest breakthrough in the technology for individual learning is the computer. CAI (computer-assisted instruction) has now moved from concept to classroom in public schools. The computerized classroom is simply an extension of programmed learning in textbooks; the computer is, in fact, the most sophisticated of all the teaching machines.

How can computers help teachers? What can they do? (a) They can do repetitive jobs easily: finding square roots, solving equations, calculating areas, etc. (b) They can carry out complex and intricate but mechanical assignments. (c) They can handle student differences in learning rate, background, and aptitude by branching techniques. (d) They can carry out a preplanned instructional sequence. (e) They can provide a laboratory for controlled experiments. (f) They can simulate complex problem situations. (g) They can retrieve learning materials.

A computer is, in short, a general purpose device which can assist in the preparation of materials, integration of media (film, tape, programmed text), simulation of situations, retrieval of information, and evaluation of performance. In addition, the computer has the capability of handling several students at one time—each one on an individual basis.

Yet computers are not the only tool in the individualization process. The 8mm film, two-way radio, dial access information retrieval systems, telephone teaching to homebound children, educasting, and teletypewriter (a sophisticated form of the computer) are other tools which hold potential for individualizing instruction.

The showcase example of instructional uses of computers in the elementary schools of our nation is in the first grade in Brentwood School in East Palo Alto, California. There, as part of a program being conducted by a Stanford University group directed by Patrick Suppes and Richard Atkinson, 170 first-graders are using a classroom computer to learn to read and to work arithmetic problems. They spend 20 minutes a day with the computer, and one commentator reports that, "Teachers have to peel them off the machines to get them back to their other classroom work."

Results are already quite promising. After less than a year of work, those pupils who had been taught reading by the combination of computer and classroom teacher were several months ahead of their peers in reading ability. They achieved higher marks in recognition and pronunciation of words, in phonetics, and in vocabulary. Paragraph comprehension was the only skill in which they were not superior, and even there the difference was slight. Brentwood is a slum area with an 80 percent Negro enrollment; hence, the experiment may have vital significance for many other schools.

Mass media themselves are becoming more adaptable for small group and individualized use. We no longer need to bring learners to television; instead, we can bring television to learners. No longer do we need to think of TV always as a mass instructional device. All too often, television has been used to "store" children at peak hours of the day as a logistics device, rather than to serve a specific instructional purpose. Large classes were formed to take care of a housing problem rather than in response to valid instructional objective.

Technologically, we can now bring TV to students in learning carrels at the back of the classroom or in a library alcove. The self-imposed restrictions in our use of the medium have been lifted, and TV has been freed to function in ways which seem more conducive to individual growth and development. Also flexible scheduling in high school means that more and more technology can be used in independent learning activities.

There is another very important facet of individualized use of media—their use by students for expressing their own ideas. Children are shooting their own 8mm films to report on projects to their class, or to express their feelings about a concept or a situation. Teen-age movie producers are on the rise and are now featured in annual film events. It is sometimes difficult for us to realize that the new generation is visually and technologically oriented because of lifelong contact with film and television and are ready, therefore, to make creative educational use of media as part of their own self-expression. I learned recently of one school which provides television camera equipment so that the children can create their own television programs and get the "feel" of the medium.

Home learning centers are being proposed by a national builders publication. Notes Walter Olsen, editor of *Practical Builders Magazine,* "With so much information for each person to know, it is only logical that some place in the home be dedicated and equipped for members of the family to learn." [3] Homes of years past included libraries or studies. Today such a learning center might include audio-tape and videotape recorders, movie camera and projector, stereo record player, digital computer, study desk, color TV, book-filled shelves, closed-circuit TV monitor, soundproofed walls, cushioned floor, and individual earphones. The small computer may soon be the adding machine used by families for everything from intricate arithmetic homework to complicated programming.

Interaction Between Learners, Teachers, and Media

Interaction, an essential ingredient in learning, requires a two-way process of communication. Can technology help bring about increased interaction? Until recently, this problem has been one of technology's limitations, but ways are emerging to help overcome the roadblock.

Here are some of the ways technology may contribute to interaction in the classroom:

Programs for use on the media may be designed to be open-ended, to foster inquiry, pose problems, open up a large range of alternatives, and/or require something of the learner. The learner may be given an opportunity to talk back to the program so that his ideas can be made known. Discussion groups may be organized to follow a program.

Several technological developments now make important use of feedback devices. With the advent of two-way radio (and eventually two-way television) and other feedback mechanisms which enable an instructor to know the feelings of learners as he moves through his discussion, technology is becoming more adaptable to interactive modes of learning.

Educational games and simulation techniques have now been added to the repertoire of interactive media. These make for increased participation by the learners.

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[3] Walter Olsen. In: "The Home Learning Center." *Audiovisual Instruction,* September 1967. p. 706.

As J. C. R. Licklider states in his chapter on "Televistas" in the Carnegie Commission's report on *Public Television*:

> Computers will enter into more and more phases of educational communication (and, indeed, into more and more phases of everyday life). When people communicate with each other, in teaching and learning or in dealing with complex problems of almost any kind, they will not merely transmit information back and forth; they will employ computers to transform and test the information and to relate their present ideas and facts to those already recorded. Communications between men and machines will constitute an increasing fraction of the total. A large fraction of all communications will be between computers.[4]

Helping Learners with Disabilities

The University of Nebraska has recently completed a project to determine the feasibility of providing practice in speechreading (often referred to as lipreading) to elementary school children with impaired hearing by using specially designed 8mm sound and color films in a self-study environment. The project, conducted at the Hard of Hearing Unit, Prescott Elementary School (Lincoln, Nebraska), is presently in full-scale operation under the direction of Robert E. Stepp, head of the Bureau of Audiovisual Instruction, University of Nebraska. In commenting on the project, Stepp says:

> Speechreading, like any other skill, requires practice. The best, and probably the most logical, method of teaching speechreading is in direct face-to-face conversation with another person, i.e., teacher, parent, friend, or fellow student. As valuable and as essential as this personal contact is, such instructional opportunities do not provide the frequency of repetition nor the variety of experiences that enable the deaf student to progress at a learning rate comparable to his hearing peers.
>
> A practice system is needed which will function as a part of regular class teaching, but which also can be extended and utilized in the residential hall and the home. A partial answer to this need for greater exposure to speechreading opportunities is the simulation of language practice on film. If films are to be the medium for facilitating

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[4] J. C. R. Licklider. "Televistas." In: Carnegie Commission on Educational Television. *Public Television: A Program for Action.* New York: Harper & Row, Publishers, Inc., 1967. p. 224.

speechreading development, they must be designed and packaged to be used in a self-operational study situation. Students, even children as young as four years of age, should be able to load and operate any devices employed or the plan will not be effective.[5]

For this reason, 8mm films were chosen as the medium. They are designed to serve as an extension of the work of the regular teacher and to provide additional practice for the improvement of language skill. The child observes the lip movements of the film teacher and makes auditory identification and associations with speech. All films were shot from the learner's point of view so that the child gets the impression that he is seated opposite his teacher.

The child learns to operate the projector himself and to handle his own filmed lessons. The results have been nothing short of dramatic. The main features of the project are these: (a) the provision of a much-needed practice system; (b) films geared to individual study and use by the student himself; (c) simplicity of operation of the equipment; (d) accessibility of the material; and (e) the realistic manner in which the lessons are presented.

Another project which deserves scrutiny is the TV series on lipreading, prepared under a grant from the National Institutes of Health and currently being run on ETV stations around the nation. The series is designed primarily for high school students with hearing impairments and for older adults in retirement homes. This project offers student work materials and has been scientifically validated. Its source is station WETA-TV in Washington, D.C.

In New York City and Los Angeles, several hundred shut-in children, unable to attend regular classes because of long-term illness or disability, are getting a full day of school five days a week by means of Tele-class service. This service enables teachers to hold regularly scheduled classes by telephone with any selected group of children who are physically unable to attend classes. Also, Tele-class may bring together children from widely scattered locations who need special attention. This could be remedial work for slower-paced students or advanced work for the gifted.

Buttons on a telephone console enable the teacher to talk to the entire class or to each pupil privately. In turn, each pupil can hear and be heard by the entire class, or just by the teacher. The buttons also enable the teacher to break up the class into small discussion groups or for special assignments. Each child has his own line so as not to interfere with the family's home phone.

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[5] Robert E. Stepp. "Programming 8mm Films To Teach Speechreading to Deaf Children." *Audiovisual Instruction,* March 1966. p. 178.

Providing Professional Growth Opportunities

The use of television as a self-evaluative instrument in teacher preservice education programs is more and more coming to be recognized as an important diagnostic and observational tool. Outstanding among these programs are the micro-teaching projects at Stanford University, Brigham Young University, Wayne State University, Purdue University, and Hunter College, New York City. The projects give ample evidence that technology can make a real contribution to building teaching competencies and skills. A recent publication of the Multi-State Teacher Education Project, entitled *TV and Related Media in Teacher Education,* gives case studies of a large number of such projects currently under way.[6]

The medical profession has pioneered in using technology for the training of nurses and interns and in keeping practicing physicians abreast of new medical developments and research. Business and industrial groups likewise have done much with technology in on-the-job training of their personnel. Educators were slower to start in this area but are now picking up momentum. Closed-circuit TV has become standard in most colleges and universities and in many laboratory schools throughout the nation. Programmed in-service packages and independent learning sequences are also being used in several teacher education institutions. One district is preparing self-instructional programmed packages which will enable teachers to have individualized in-service opportunities. To date, in-service education has been a *mass* experience.

There is a growing need to use mass media to reach prospective para-professionals in their homes with a training program. Such a program can help to bring these persons up to date on new techniques and methodology and to demonstrate ways in which they may serve most effectively in the school program. Many of these auxiliary personnel are former teachers who left teaching to rear a family and could now return to the classroom for one or two days per week if they were given "refresher" training.

Lest one think that television is the only tool for in-service education, he should be reminded of what is going on with two-way radio at Albany Medical College and at The Ohio State University Medical School. These schools have been pioneering with the use of two-way radio communications in conjunction with telephone lines (in order to reach beyond the coverage area of the station's signal) to present in-service educational opportunities for physicians and surgeons.

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[6] Howard E. Bosley and Harold E. Wigren, editors. *Television and Related Media in Teacher Education.* Baltimore: Multi-State Teacher Education Project, 1967.

As a means of keeping doctors abreast of new medical research and techniques and to offer a means of intercommunication among members of the profession in a given area and on a given topic, a weekly luncheon meeting is set up around the broadcast. Slides are sent to the group in advance to be used in conjunction with the broadcast and at the appropriate time during the broadcast. (Sometimes this has been referred to by other countries as Radio-Vision.) In effect, a university without walls has been created. Here is how the broadcast works: Doctors meet at a given time via radio to hear the latest about arteriosclerosis. As the lecturer speaks, slides are projected at each location. Participating doctors ask questions. They can write questions on a card, pass the card to the moderator who signals the moderator on the other end. The question can then be heard throughout the network, as are the answers.

Sixty hospitals located in seven states in New England now participate weekly in the Albany program. It has been estimated that in the past decade if doctors participating in the Albany medical network had to travel to college classrooms to receive the identical training, they would have had to travel the composite total of 44 million miles. Radio is no longer a simple old-fashioned medium; it is becoming a multi-dimensional medium through the development of a major technological advance known as multiplexing, whereby a broadcast station can be used for the transmission of several programs simultaneously, accomplished through the use of the FM sub-channels of the station.

Thus, a station could be broadcasting a symphony concert to the homes of the community while the sub-channel is carrying an in-service course for teachers. Two-way audio-systems offer highly specialized information to professional audiences, allow for exchange between the sender and the receiver, and foster imaginative use of audiovisual materials (charts, slides, x-rays) to amplify the spoken word. An international conference by two-way radio was held last year between the doctors in Albany, New York, and Sydney, Australia. It seems to me that this technique would be useful in our in-service education programs for teachers. As yet, I know of no school district or combination of districts using two-way radio.

Releasing Teachers for More Creative Activity

Educational technology has proved that it can do some teaching tasks and do them as well as or better than the teacher. Computers, as I have pointed out, can carry complex, intricate, but mechanical assignments; they can do repetitive jobs easily and oftentimes far more effectively than can the teacher. Much of the routine and drill, much of the development of maintenance skills in learners can now be assigned to technological tools, such as the computer, programmed instruction, and audio tapes in the learning laboratory.

CAI (computer-assisted instruction) can also relieve teachers of many tasks that are only incidental to teaching. As Louis Hausman of the U.S. Office of Education puts it:

> The teacher operates at least part of the time as a human data processing machine: counting heads, grading papers, filing reports on everything from truancy to crayon inventory. Now the electron will relieve the teacher of the chores that a machine can do better, and free her for those assignments which only human beings can do.
>
> The machine will emancipate teachers and restore them to the dignity and fulfillment which is integral to their functions.[7]

The computer cannot reinforce curiosity, inspire creativity, or develop interpersonal attitudes. This is the unique role of the teacher. Computers may free the teacher to do more creative activities with human beings—the jobs no machine can do for the teacher. Increasingly, the teacher can become a diagnostician of the learning situation, who knows when to send the student to a particular resource for help or to a specialist, either live or on tape, in a particular learning area. Thus the teacher's role today is emerging to be not wholly unlike that of the general internist who diagnoses a medical situation and prescribes specialist help where needed.

Teaching is becoming a shared responsibility with a teaching team composed of an internist, specialists, auxiliary personnel, and resource materials. These are physically available not only in the individual school but from a central storage bank—and eventually from far off places or institutions—brought electronically into the school, classroom, or home of the student. A systems approach is needed which can make the most efficient use of all resources for learning—human and material—in a deliberate effort to match scarce resources to basic educational needs.

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[7] Louis Hausman. "The ABC's of CAI." *American Education,* November 1967. p. 15.

New Prospects for Educational Technology

What lies ahead in educational technology? Let me comment briefly about the prospects in major fields of development.

Satellite Communications

The Communications Satellite Corporation is pushing toward reaching its full global satellite system in 1969. Sixty countries are now included in Intelsat (International Telecommunications Satellite Consortium) for which Comsat serves as manager and maintains a majority vote. Immediate questions facing the American people are these: Should Comsat, in addition to its international operations, be authorized as the exclusive domestic operator as well?

The Ford Foundation, the American Broadcasting Company, and a dozen companies and organizations have proposed that they be allowed to launch their own satellite system to distribute ETV programs within the United States. To counteract these proposals, Comsat has in turn proposed an exclusive domestic system that would put four satellites over four time zones for multi-purpose use (i.e., telephone, data, message-type circuits, in addition to broadcast programs). It proposes also to put up a pilot demonstration satellite in 1969 to show how this would work.

At the same moment, some startling advances in the technology of space communications have occurred in the area of direct satellite-to-home broadcasting, which until a year ago was not thought feasible for another decade. With giant rocket boosters available much sooner than expected, direct satellite-to-home broadcasting seems to be operationally not more than five or, at the most, ten years away. This would bring about revolutionary retooling of our whole broadcasting system because it would mean a drastic reduction in the number of needed ground stations.

Understandably, Comsat, the telephone companies, and all common carriers and local broadcasters vigorously oppose the idea because it means changing their whole way of life. In a sense, direct-broadcasting satellites would bypass broadcast stations. Mexico and Japan plan to move ahead with direct-broadcasting satellite proposals. It may be that we in education should have our own satellite—Edusat. In any event, one fact is crystal clear: Educators need to get together at once to determine the requirements of education for satellite space.

Storage and Retrieval of Information

The process of centrally storing and making electronically accessible information from remote locations covers many concurrent developments. This process has been designated in the literature by several labels: dial access, remote access, information storage and retrieval, etc. At present, program storage devices are generally speaking of three types: audio program storage devices, video program storage devices, and audio-and-video programs accessible via an attendant.

What about the future? Undoubtedly in the not-too-distant future, computers will become a part of this system for the storage of a variety of data, information, instructional programs, etc. These computer-stored programs would be accessible to the student through touch-tone pads (push buttons) and would be received through audio and/or visual display devices (cathode ray tubes).

Microforms

Technological information management systems in business and industry, government, and education are now rapidly developing. Because teaching-learning methodology is moving toward a greater emphasis on independent study or self-instruction, and because library storage and retrieval of print and nonprint media has historically been linked to independent study procedures, information transfer systems are beginning to merge with teaching-learning transfer systems. The technology of microforms has already advanced to the stage that a microform system could presently be made available to a school district, once that district had analyzed its need for such.

Computer Technology

According to R. Louis Bright, formerly associate commissioner for the Bureau of Research, U.S. Office of Education, computers will be ready for massive use in the classrooms of American elementary and secondary schools "in from three to four years."[8] Local school decision makers should not plan to implement the computer now, "but in three or four years the computer should be ready for use to teach reading and arithmetic in the early grades and for language instruction at all levels."

Bright also predicts that the computer has a bright future in teaching the fine arts—music, drawing, and art—because it excels in teaching discrimination between what is good composition and what is not.

He also says that the computer will have more application in the teaching of music than of physics. "Nothing can match the computer's discrimination of tone sounds," he contends. Bright also points out that it is now possible to utilize computers in learning situations for $1.40 per student hour—the normal cost of today's "special aid" programs.

At present there are four major uses for computers in education: (a) administrative record keeping and other statistical purposes; (b) instruction in a subject, such as biology; (c) data-solving in such subjects as math, physics, and economics (i.e., to do intricate mathematical computations needed to solve larger problems); and (d) use in teaching data processing and computer techniques to high school students in vocational training courses. The Philadelphia public schools are at present engaged in all four uses.

8mm Films

In an end-of-the-year report issued by SMPTE (Society for Motion Picture and TV Engineers), sales of regular 8mm and super 8 silent short films (film loops, single concept films) were revealed to be up 73 percent over last year. Total titles now have reached 4,768.

Perhaps the fastest growing of all the newer educational media is the 8mm film. Reason? It is inexpensive. It is convenient and portable to use. It is short and can be adapted easily into classroom activities. It is ideal for independent learning and for concept development. It is easy to use by students in making reports and for other school projects. Even the smallest elementary school child now can become a film-maker.

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[8] "Enormous Role Seen for Computer." *Education USA*; November 27, 1967. p. 78.

Two-Way Radio

Radio has been a hidden—almost buried—resource in American education. It appeared early on the educational scene, then quickly vanished in all but a few school districts, bowing to its more glamorous younger sister, television. Now that TV has been encountering some disenchantment on the part of the educational community, radio has been dusted off and in the process we have discovered an exciting new enchantress: two-way radio. Radio revisited puts the spotlight on the two-way experiments at Albany Medical College and at The Ohio State University. Yet there is no reason to let the medical profession have a corner on the market. This idea should lend itself readily to in-service education of teachers.

In this presentation, I have tried to point up the range and diversity of possibilities which the new educational technology seems to present. I have indicated a few of the places where innovative work in media is going on and which deserve close scrutiny in the days ahead. As we look at each new technological development, it is important to ask, "What does this tool do that would make my job more effective?" keeping in mind that, when used in combination in a systems approach, technological media serve with maximum effectiveness.

These media offer ways of extending resources—human and material—over a wide area; they offer the means of teaching more subject matter to more students more efficiently; when used wisely, they can relieve the teacher of routine duties and free him for those tasks which only one human being can do in close relation to other human beings. Even more important, they can free each learner to work more and more independently.

To date, educational technology's use in our schools can be characterized as peripheral, marginal, and haphazard. I urge you to start taking technology's resources seriously as partners in your instructional endeavors—not just as enrichment or supplementary tools, additives to an already overloaded educational structure—but rather as integral and basic tools, each with a well-defined role to perform in teaching and learning.

These resources are putting the spotlight on *learning* instead of *teaching*. They are forcing us to reexamine our teaching methodologies and to look anew at the ways children learn. In the words of Fred T. Wilhelms, "When you stop *teaching* so hard, they start *learning* more."

What Is at Stake: Value Conflicts and Crises

Harold B. Dunkel

FORTUNATELY I have been asked to present the crises, conflicts, and problems of our times, not to solve them. Too many writers and speakers, confronted with these questions, have felt under the same pressure as the piano player in one of my younger daughter's stories.

After a hard day, a man dashed into the nearest bar; and in his haste to order a drink he paid little attention either to the man playing the piano or to the monkey perched on top of it. But no sooner had his martini arrived than the monkey jumped off the piano, hopped up on the bar, fished out the olive with a hairy paw, popped it into his mouth, and leaped back up onto the piano. Our man naturally was indignant. Tapping the piano player on the shoulder, he inquired, "Say, do you know your monkey just stole the olive out of my martini?" "No," replied the piano player. "I don't know it; I don't think I ever even heard it. But if you will just hum or whistle it slowly a few times, I feel sure I can fake it."

Facing complex problems, too often we feel sure we can fake a solution to all or most of them. I come with no such self-confident hope of answers, but with the philosopher's conviction that only by worrying about vital questions do we ever get answers.

Professors of education are supposed to deal in platitudes; and, as my colleagues who have deserted the English language for sociology would say, being the role-incumbent, I want to meet role-expectations. I shall consequently begin with the great platitude of our times: We are a pluralistic society.

Put simply and concretely, this statement suggests that on a given Saturday morning one man gets up and goes to Mass, another goes to *schul,* while the devotions of the third are limited to muttering as he rolls over in bed, "Thank God, I don't have to get up." We are a diverse people, and politically and socially we feel committed to having a society which permits the widest possible range of values, beliefs, attitudes, aspirations, and styles of life to be espoused by individuals. To be sure, we are in many respects far from realizing this ideal, but by and large our society and our political organization do attempt increasingly to maximize individual freedom of belief, choice, and action.

Obvious and troublesome limitations on this individual freedom immediately arise when we undertake joint enterprises using common resources. In the various groups to which we belong and as a nation we have only collective, not individual choice. Insofar as our group decides to do something, presumably we *all* have to do it. And because we are pluralistic, many of us will not like the group's collective choice. Yet any group which depended on continual unanimous agreement would be very small and very short-lived.

Pluralism inevitably brings dissent and such conflict can never be solved, if by "solved" we mean getting everyone to agree. A major problem of our times is how dissent can be better handled since many people believe that our traditional machinery for handling it is obsolete or completely *kaput.*

We have always been a pluralistic society, but for a long period some voices were relatively mute. I myself went to what we would now call an inner-city elementary school at the end of the period when America was still the melting pot and when the brightest, bluest flame under that pot was the American public school. In what was not an atypical way, my school taught its narrow variety of English, patriotism, proper behavior, and the rest to a wildly assorted group of children. Often when I visited school friends at their homes, they had to act as interpreter for me with their mothers who spoke only Polish, or only Italian, or only Greek. But neither the parents nor children wanted to be "greenhorns," a word I have not spoken or heard for a good many decades. These newcomers wished to become Americans, and that meant internalizing to a considerable degree the particular brand of things American dished out by the school. Obviously this process was not an unblemished good, but it was probably a lot easier then to run schools.

In any case, since then things have changed. The diverse voices are no longer mute. One is reminded of that old, old story about the movie company making a gangster film. Each time advance publicity mentioned the hood's nationality or anything else, indignant protests were lodged by various groups. Finally the assistant director suggested, "Why don't we just say he's a bastard? They aren't organized yet."

I have no data on that particular group, but it does seem as if everyone else is organized and is exerting pressure on behalf of his own point of view. As a nation we have now become vehemently and vocally pluralistic. Whatever the advantages, this fact raises severe problems not merely for the future conduct of our schools but also for all our social and political life.

Movement Toward an Urban Society

The problems arising from pluralism appear in diverse forms. One of them usually comes labeled "urbanism." We are told that we Americans are now two-thirds or three-quarters urban, the proportion depending of course on the definition of "urban" employed. The precise figure does not much matter since we know that, whatever it is, it will be larger every subsequent year.

We have, however, a strong anti-urban tradition, stretching from the frontiersman, who moved westward as soon as he saw the smoke of someone else's fire, to the suburbanite who worries when building operations start near the fence of his 2½ acres. We will not become urban easily.

Many motives sparked the flight from the city, such as the desires for cheaper land, newer housing, and open space in which the kids could play. But we must not ignore the fact that escape from the pluralism of the city was often, if not always, involved. By moving out one could get away from "them"—whoever it was at a particular time and place lurking under that vague pronoun. Many Americans regardless of race, creed, or social class voted on the issue, if not with their feet then with the moving van. The city has become a place to shun. It may be a place to visit or work, but certainly not, in the opinion of millions of Americans, a place to live. Yet living in an urban community is precisely what more and more Americans are going to do with every passing year.

Education has done little or nothing to change anti-urban attitudes. In fact, many former influential educational leaders—John Dewey, to name only one—made no secret of their love for the villages and the farms where they grew up; and often parts of their educational program were designed, not to make the city attractive and understandable, but to replicate in the urban setting the virtues and the educational opportunities they had found in the scenes of their youth.

To me, it does not seem that the recent generation of educators has done much to change the picture, though this judgment may be uninformed. We have had a certain amount of rhapsodic talk in our schools about the joys of urban diversity, but that talk, at least as I have encountered it, has been vague rather than specific and sentimental rather than realistic. Certainly it has failed to convince most young parents, who, though they are recent products of our schools, have continued to leave the city if they could.

If willy-nilly we are going to be an urban society, we need to rediscover the actual values of urban living, or, if they no longer exist, to invent and perfect new ones. And once we are clear about them, these values are likely candidates for emphasis in our educational programs.

This process of discovery or invention, whichever it is, will not be an easy one, for cities themselves have changed and are changing. We must never forget the extent to which historically the city often consisted of enclaves as various trades, professions, and other groups naturally hived together. The "potters' quarter," "the street of the silversmiths," the "students' quarter," Chinatown, and the rest remind us how clerics once gathered near the church, the workers and managers near their factory, and various other groups where they could readily find their kind of religion, language, food, and/or liquor. As an aggregate of such villages, the city often possessed all the advantages of a small town plus those which only the city offered.

Yet the automobile has changed all that. Few parishioners of urban churches live within a radius of a mile or two of their place of worship. Few students and few faculty members of most urban universities live within a similar radius of their institutions. The city has become increasingly the home of those, on the one hand, too poor or too dark-skinned to get out and, on the other hand, of the affluent who have no children of school age and who have a doorman and a security force to protect them.

In most recent urban redevelopments, occupations and social classes have become mixed together as, for various reasons, city planners have put public-housing units near the luxury high-rises. In most city neighborhoods the hours 7-9 a.m. find the inhabitants driving great distances to all points of the compass in order to work at the most diverse occupations.

Traditionally the natural bases of community and communication have been vocation and avocation. Practitioners of the same trade or devotees of the same sport or hobby have been able to communicate even over wide chasms of language, culture, or class. But these factors no longer determine the housing patterns of the megalopolis. Can we find new bases of community and communication?

Historically the theater, the concert, the museum, the nightclub, the large emporium, the highly specialized shop, and the vast business enterprise have been the attractions of the city. Now these are often reproduced in the suburban shopping center or are easily available by freeway from that part of the sprawl still called the suburb. Will that diminishing fraction of "non-urban" Americans be the wealthy and the lucky; or is there something to be said for living with people—even if they are not "our kind" of people?

Education for urban living is going to have to mean more than money for Head Start programs and the inner-city school. Pluralism will have to become more than something we seek in our own case and at best tolerate in the case of others if we are to live happily as an urban mass. The school has to live with the consequences. Perhaps the school can do more than it has done to control these factors.

Tension Between Freedom and Control

Another social and political form in which the problems of pluralism appear is in the centuries-old tension between freedom and control. The general outlines of our traditional solutions are familiar. As a pluralistic society we favor the maximum of freedom. The question then is where freedom stops and anarchy or license begins. We also know that we cannot have a personal policeman for every citizen. Control must be internalized; the only control worth talking about is self-control.

These views raise the familiar question, "What standards should the individual employ in controlling himself?" Traditionally the minimal standard has often been that the citizen, be he child or senior citizen, should obey the law. In general, then, parents and schools felt secure in teaching children to be law-abiding.

Yet in recent years we have heard more about civil disobedience than about obedience to law, and it is not without significance that in 1967 our nation issued a postage stamp honoring Henry David Thoreau, whose essay on "Civil Disobedience" is a classic statement of the position and whose *Walden* was on the "in" book list long before the *Sayings of Chairman Mao.* We have had state governors illegally standing in schoolhouse doors to maintain segregation and marchers protesting illegally to break down segregation, all of them acting in defiance of what they considered "bad" laws, "bad" decisions of the U.S. Supreme Court, or "bad" city ordinances.

Now those who have defied the law because of decisions reached by listening to some inner voice or searching into the depths of their own beings or into true Being itself are no new phenomenon. This class has produced our most famous heroes and martyrs as well as many of our lunatics and criminals. We all know the old definition of the "patriot": "a successful traitor."

Any novelty in our present situation seems to lie in two points. One is that now everyone is getting into the act. Particularly since the Nuremberg trials, everyone feels duty-bound to assess each law and break it appropriately. More people than ever before have come to believe that the decision of the majority or any other legally constituted group is not necessarily either legally or morally binding upon them.

The second point is that much of the time the only standard by which this decision to transgress the law is made is personal judgment or taste. In the past, appeal was usually made to some "higher" law. In our present society the traditional forms of this higher law and the means of access to knowledge of it are highly suspect and often flatly denied. The cogency of imperatives based upon such sources has enormously diminished for vast numbers of our fellow citizens. What is apparently left is personal choice or chance.

Never before has the general doctrine been so widespread that each individual man is on his own in the moral and political life, with no rules to guide him in picking his moral principles or choosing his fundamental moral premises. Never before has this doctrine received so much support from respectable philosophers and theologians. The absurdity of the human condition, the brute act of volition lying at the base of moral choice, and similar themes are all well-worn for anyone who has read a book or seen a play written in the past 20 years.

Certainly the present place is not the one in which to examine these numerous and varied doctrines in detail and to attempt to assess their individual validity. Certainly, also, the fact that such views produce social and educational problems is no proof of their falsity. Yet we must begin, as many already have, to ask, "What is the boundary at which the cohesion necessary for even a semblance of social and political organization will vanish?" Can man live in the twentieth and twenty-first centuries under benevolent anarchy, even with love and flowers? What are the justifiable bases for dissent, and what are the proper limits in its expression?

Any game (be it chess, football, or craps) is impossible if the players continually remake the rules in accord with their own preferences. Possibly life has to have rules too. If the old rules are invalid or inappropriate, where can we get brand new ones? The answers I have heard thus far to this question do not seem to me plausible or cogent.

It is one of the major ironies of our day and generation that the word "dialogue" has become a shibboleth just at the time when we have less mutual basis than ever before to talk to each other rationally. It is easy to sit-in; it is easy to riot; but we find it hard to talk. What shall we discuss?

De gustibus non est disputandum is a familiar tag simply because matters of taste are little open to rational discussion and argument. I think that my girl is a vision but that yours is a sight. The more that ethical, social, and political values become matters of brute personal choice, the less we have to talk about and the less we have to teach.

Involvement and Responsibility

Another thorny problem of our times centers around involvement. Not long ago there were loud complaints about "apathy," and teachers at all educational levels set out to be "concerned" and "active" and to make their students so, too. But we have stirred up more problems than we have solved.

A few years ago there was a dinner party at my house. Since one couple had said they would be late because they wanted to see the last showing on campus of *In White America*, during the meal I inquired in my usual hospitable fashion what they had thought of it. The husband replied that he did not think the production was very good, but that he certainly hoped all his white friends had seen it so they could realize their guilt toward the Negro.

At this point one of the Jewish guests leaped into the fray. He said he sincerely regretted what had been done to the Negro, but that it was foolish to expect him personally to feel "guilty" and that he certainly did not intend to do so. He concluded his rather warm statement by inquiring what my Negro friend and his ancestors had ever done about the pogroms, and added that it was no good his saying that the Negro had been powerless, because his own Jewish relatives had not been in a position to exert much leverage on behalf of the Negro.

This promised to be one of those Hyde Park dinner parties at which all the guests stand at their places and shout at each other. But fortunately another guest tactfully introduced the injustices done to the American Indian and thus spread the guilt around.

But the mention of the Indians had reminded me that a few weeks before, one of our Arab students had asked me why people were so excited about the American Indians and yet much more recently allowed the United States to be a party to the ejection of Arabs from their ancestral lands in order to create the state of Israel. And a little earlier another student, a Muslim from India, who had lost all his immediate family in the religious massacres, had asked me why the United States and the United Nations had not done something about the killing of Muslims in India and of Hindus in Pakistan. And he would not allow me, he said, to allege that those riots were merely an internal matter for the two countries involved, since that line of reasoning had justified for many people the slaughter of the Jews as merely "an internal problem" of the Third German Reich.

I also recalled the many other respects in which I had been remiss. Friends and colleagues had urged me to write more letters than I had in fact written to the President, the governor, the mayor, the Congresses of both the United States and Illinois, to say nothing of the City Council of Chicago. Others had urged me to attend hearings or file opinions with the Department of Urban Renewal, the Library Board, the Sanitary District, and a large number of other agencies. I had certainly not done all that many people considered my duty.

I do not offer my behavior as a model for emulation, but I do suggest it as a symptom of the psychological state likely to develop from over-engagement or over-involvement. We not only feel more guilty; we feel more impotent to control this total course of events for which we have taken responsibility. I know that man is not an island and that the tolling bell tolls for me. But how far does the writ of my responsibility run?

The problem has many dimensions. After the war, professors were upbraided for living in the ivory tower. With a large number of social and political organizations stumping for the plane fare, Professor Juggins went to Washington to advise the President, Huggins went to India to help them balance their budget, and Muggins took off to help Nigeria emerge. There was a loud chorus of approval; the intellectuals were at last involved, and their expertise would help remake the world.

Yet meanwhile back at the ranch of the university there were rumblings. Students got a little tired of the fact that with Professor Juggins in the airports, his classes were taught primarily or solely by his research assistant. And who was going to approve the thesis begun under Huggins, or were its 200 pages to be sent airmail to New Delhi at 25 cents a half-ounce? And what ever happened to those chapters of another dissertation which Muggins had taken to read on the jet to Nigeria?

Likewise Professors Higgins, Miggins, and Jiggins, though they were quiet about it and did not carry flowers and stage sit-ins in the faculty club, were boiling inside because of the extra load of teaching, research, guidance, and committee work thrust on them by the absence of those "cosmopolitans" Juggins, Muggins, and Huggins. They were—as Army language used to put it—"volunteered" for these jobs by their colleagues. One could, of course, ignore those "locals," Jiggins, Miggins, and Higgins, as merely too stupid or too lazy to get grants or foreign appointments of their own. But eventually even university administrators began to wonder who was minding the store. When time and energy are limited, commitment to one thing precludes equal commitment to other things. And our commitment to something may force on those about us—our families, friends, students, and colleagues—some other commitment not of their own choosing.

Then there are also the dimensions of my personal power and of my special responsibility. Last summer my younger daughter was a "new kid" at a camp. Since for the first few weeks she was feeling very little, lonely, and sad, I wrote her a brief note every day. As one of my colleagues quickly pointed out, with that much letter writing I could have kept the President, the governor, the mayor, Congress, and many boards and organizations on their toes. Why then did I spend my time and stamps as I did? For one thing, there was no other father going to write my daughter if I did not. For another, Senators Dirksen and Percy, for example, would probably have paid little heed to my letters in their daily pile, while for a homesick child, a letter from home was an event of a very different order. I could be effective in the case of my daughter. I am not sure what I could have accomplished in the case of my Senators.

The examples are not intended to be facetious. They point to some obvious limitations on *total* involvement and *total* responsibility.

About the turn of the century the English philosopher Bradley wrote a chapter in his *Ethical Studies* entitled "My Station and Its Duties." There he tried to define the limits of our moral obligation by reference to our situation in the world and to the extent of our power. Possibly this view now seems unduly restricted and old-fashioned, but I personally am convinced that we must move back some distance toward it if our involvement is to be psychologically bearable and socially fruitful.

Mention of letters to be written to the President, legislators, and other governmental bodies leads to another related area of difficulty. When we live together in groups, we generate public business, and we delegate these common concerns to public officials or—as they like to call themselves near election time—public servants who are to take care of them for us.

But we cannot leave matters at the ballot box. We have been well taught that eternal vigilance is the price of liberty. The average American seems pretty well convinced that many of his public officials, unless closely watched, will steal, make deals, or somehow behave dishonestly. Certainly as a citizen of Indiana and Illinois for fifty years, I can without much effort recall a distressingly long list of officials from governor to patrolman who have actually served time in penal institutions. In fact, when I hear "corrupt regimes" in various foreign countries castigated, I often wonder in what state the speaker has his home.

Even if we ignore this sordid side of public life, we realize that the most honest and competent official finds himself under many and varied pressures to do things contrary to what I believe is my interest. There are, first of all, entrepreneurs, ranging from the huge corporation to the single individual who wants to build a filling station, all of whom want to do something to make a profit regardless of any deleterious side effects of their enterprises. Then there are various governmental agencies which often disregard all other considerations in the singleminded performance of their specific functions of building freeways or controlling floods. Then there are the private associations who may want, for example, to be able to buy and keep firearms easily, heedless of possible undesirable consequences of this privilege. All these groups subject the public official to enormous and continual pressures of various sorts in an effort to attain their particular ends.

As a result, the average citizen cannot leave public business to his officials. He must continually be organizing or joining some countervailing group which can generate comparable public opinion, publicity, campaign money, and all the rest in order to offset this other pressure. Consequently we have deplored apathy in the citizen and have urged our pupils to participate in public affairs. Write your congressman!

This is all very well. But let us reflect for a moment how many million—and I repeat, million—enterprises, agencies, and organizations there are whose activities I may wish to support or oppose. Not all of them, to be sure, impinge on my interests all or even much of the time. Yet if on any given day I actually jot down a list of the businesses, public bodies, and private groups whose efforts I feel I should actively support or oppose, beginning in my immediate neighborhood and moving out to the national and international scene, I very quickly get a long list.

Obviously I shall never do anything about so many. Yet probably if I do not exert pressure or counterpressure of some sort, much legislation will be enacted and many administrative decisions will be made in what I consider the wrong way. Furthermore, since those interests can bide their time and devote themselves persistently to furthering their single aim, they will probably get their way eventually when I am tired or distracted, since I must fight on a whole series of fronts, constituting or supporting many different lobbies, not just one.

The Greeks of fifth-century B.C. Athens did not have to work for a living and hence could largely devote themselves to public business, becoming what they called *polypragmon,* "men of many affairs" or, as the pejorative translation runs, "busybodies." Perhaps when the computer confers limitless production and endless leisure upon us, we too can devote ourselves to public affairs. But meantime most of us have vocations and activities connected with them. We have families and friends. These demands leave us with limited (and often severely limited) amounts of time in which to support worthy causes, to give surveillance to our officials, or to generate pressure in instances in which we believe wrong is being done.

How can we manage our public business? The answer that most of us have in fact privately adopted is this: do what you have time for in regard to the matters you feel most keenly about, and do not feel too guilty about neglecting the rest in the hope that someone else will carry the ball there. However, this is not, I believe, the course we have usually urged upon students. Is it the best we can do? Or can we get a better and more significant answer for our huge, tightly interlocked society?

The Problem of Achieving Identity

If engagement and participation are the obverse of the coin, the problem of identity is in some respects the reverse side. This is a problem on which the youth—or so they say—are hung up, and I personally suspect that the situation will get no easier. The fact that the Seven Sages of Greece suggested "Know thyself" as the motto to be set up at the Delphic oracle indicates that the problem is no new one, but the question has usually taken a different form from that which it assumes today.

Psychoanalysts have frequently pointed out an interesting contrast. Freud's patients, living in the rigid class and social structure of Old Vienna, felt prevented from becoming sexually, occupationally, and every other way what they wanted to be, and they came to Freud to get relief from their frustration and attendant symptoms. Many American patients, on the contrary, coming to the couch from the much looser American social structure, ask "Who in the world am I?" and "What do I want to be?"

It may seem to be drawing a portrait of the Squares of Squaresville to suggest that in many societies a man has known who he was because he was the descendant of this family, married to this wife, father of these children, worker at this job, member of this church and of this club and these organizations, inhabitant of this house in this town. This was the quintessence of the middle-class rut with all its sins upon it, and it probably involved all the difficulties embodied in Freud's patients. Yet there was no problem of identity. The man knew who he was and so did everyone else. This set of relations constituted who and what he was and served as a set of coordinates, so to speak, to define his place in the world.

If relations can serve in this way to produce and define identity, then the "cop out," the denial of all ties, is not likely to be a viable path to identifying one's self. Nor does the other extreme, that of vaguely relating one's self to everything and taking some responsibility for everything and everybody, promise to be more effective, for the relations then are too attenuated to serve their function.

As already suggested, certain facts about American life complicate the problem. That sense of identity which could possibly come to the child indirectly from his family, his house, his neighborhood, and his school is not the common lot of the American youngster. We are all aware that families are mobile geographically, socially, and vocationally; we often forget how much mobility there is within families. Children do not merely change houses and towns and schools; many of them switch mamas or papas and brothers and sisters, too.

We have, however, produced these changes in our matrimonial, familial, occupational, and other arrangements in order to secure certain values, and I doubt whether we are likely to rescind these modifications. Yet the problem of identity is one price we are paying. It is not surprising that, being rootless, we feel the lack of that nurture and stability that come from roots. As we become larger, more pluralistic, more impersonal, can we keep the individual from becoming lost, even to himself? It will not be easy. Or is individualism doomed and must man, like the bee, have only his place in the swarm? This prospect, if possible, does not seem inviting.

In conclusion, in touching on the problems I have treated, I have kept my promise or threat not to offer simple answers. Ours is an age of "instant" everything, including instant solutions; and in most of these panaceas for social ills, education is listed as the active ingredient. Things will not actually be that quick and easy.

As Jacques Barzun said many years ago in another connection, in regard to these issues we stand not on the field of Armageddon where we battle for the Lord, but on Dover Beach where dubious armies clash by night. Nearly every society seems to have felt that it was in turmoil, and perhaps we have less warrant than we sometimes think for claiming crisis and chaos as our very own. Even Adam is reported to have said to Eve as they walked out of the garden of Eden past the angel with the flaming sword, "My dear, we live in times of transition." And we must remember that they too had one kid who was a juvenile delinquent.

Be that as it may, the problems of society have come home to roost on the school. But they have done that before and probably always will. Yet we have found social and educational solutions before, and I personally have no doubt that we shall do so again, even though only slowly and with difficulty.

The Neighborhood School: Status and Prospects

Robert J. Havighurst

A NEIGHBORHOOD school is one that serves all or nearly all of the children in a local neighborhood area. When applied at the elementary school level, it means a school that is within walking distance of the homes of all the pupils.

This is the traditional American public school. The great majority of present-day adults attended such a school and have pleasant nostalgic memories surrounding it. On the other hand, this kind of school has become a center of controversy in the big cities of the country, and there is a substantial argument against it.

Most neighborhood schools are in large and medium-sized cities, simply because most school children live in such cities. However, something like 30 percent of school children live in towns under 2,500 in size or in the open country. Generally, they go to the one school in their district, and sometimes they have to go by bus. There is no other choice for them. In 1961, out of a total of 30,000 school districts, there were 19,800 districts with just one school building. There were another 3,500 districts with two school buildings apiece, and these might also be thought of as neighborhood schools of this special "simple" type, which contain all the public school children of a community, without regard to economic or racial status. These one- and two-building districts are practically all located in rural areas, defined as including towns under 2,500 in size. The schools in these districts will not be considered in this paper, except by implication at the close.

What Is Wrong with the Neighborhood School?

All the other "neighborhood schools" are in districts with three or more school buildings. There are three general criticisms to be made of these schools, from the point of view of what is generally regarded as good education.

- First, the typical neighborhood school draws its pupils from a relatively homogeneous economic and racial group of parents. Therefore, the pupils are segregated economically and racially. They tend to associate with their own socioeconomic group and have little contact with pupils from other socioeconomic and racial groups. The reason for this is that American cities tend to be structured socioeconomically. Even the small cities have their "good" and "poor" residential areas. In the typical small city shown in Figure 1, with four elementary schools, one is likely to be mainly middle class in composition and by contrast one is likely to be mainly lower working class, while the other two are more nearly cross-sectional.

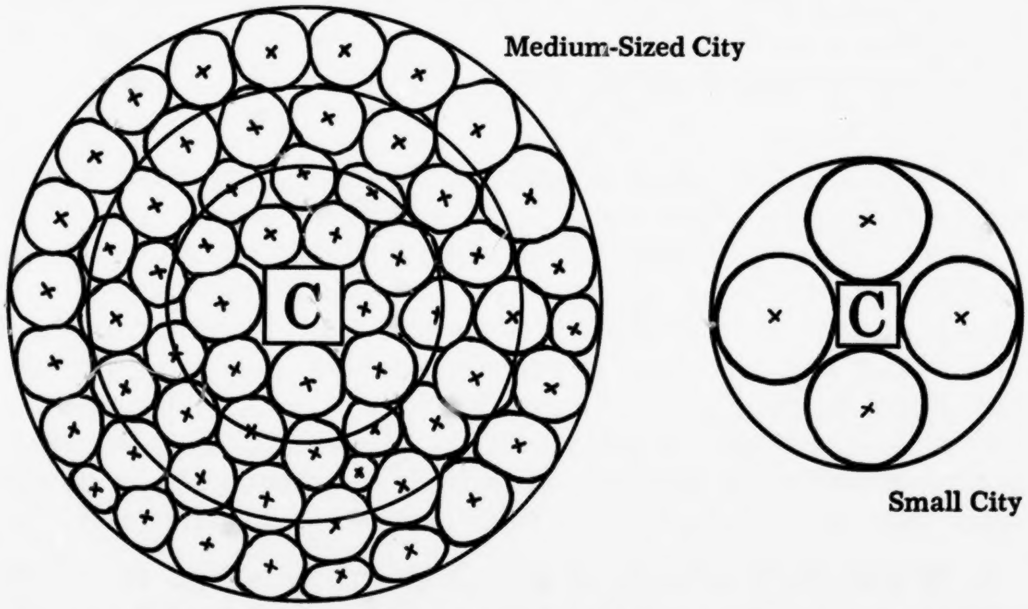

Figure 1. Elementary School Attendance Areas in a Small City and a Medium-Sized City

In the big city shown schematically in Figure 1, with over 50 elementary schools, the economic segregation is more pronounced. There is a fairly large slum area, with five or 10 slum schools. There are one or more high status areas known as the "country club" or the "Hill" areas, where the schools are populated by upper middle class and upper class pupils. There is probably a Negro section with a number varying from two or three to 20 schools. There is a large area of stable working class residences with 20 to 30 schools. There is also a number of schools that "straddle" social class lines, with what is more nearly a socioeconomic cross-section of pupils, generally consisting mainly of pupils from lower-middle and upper-working class families.

In the big city, with a hundred or more elementary schools, the socioeconomic segregation becomes more complete. The areas of one-class residences become so large that young children seldom get outside of their own area for school, play, church, movies, library, and shopping.

If we make the typically American postulate that it is good for children of various socioeconomic and racial groups to associate in the public schools in proportions which approach their proportions in the general population, we see that the big cities tend to lose this virtue as they grow bigger, if they continue to organize their school system around the neighborhood school concept.

In 1960, the American population was 70 percent urban, whereas it was 70 percent rural in 1900. While this trend was going on, it was producing an economically segregated school system.

- The second criticism, somewhat related to the first, is that the neighborhood school tends to be "provincial" and narrow in its relation to a complex society. It seldom reflects the complexity of the wider community which it serves. Where the parents are active in the parent-teacher association, and in reviewing the curriculum and screening and hiring teachers, they tend to mold the school in their own image. The school tends to become an adjunct to the homes of the school's neighborhood. This tendency can be minimized if parents and teachers want to minimize it, but often they are not conscious of their own parochial tendencies.

- The third criticism of the neighborhood school is that it tends to lack certain useful teaching equipment and facilities which can only be assured with larger schools or with the provision of supplementary educational facilities. It may lack a school library, a science room, mathematical and biological models, films and tape recordings. This is not a necessary shortcoming, if the school system is reasonably up-to-date and reasonably well financed. But often the best way to secure these desirable facilities is to take the children outside of the school to facilities that are shared with other schools or to enlarge the school so that it serves a larger and more varied group of pupils.

In general, then, the neighborhood school appears to be an obsolescent form from an earlier time when American communities were smaller and had a simpler structure, when schooling was a simpler process, and contemporary life and contemporary society were simpler.

But the majority of American parents do not see the neighborhood school as obsolescent. They see many good factors in it, and they wish, if possible, to preserve these good factors.

What Is Good About the Neighborhood School?

The neighborhood school as seen by parents has the great advantage of being close to home. Children can go and come from school alone, from an early age. If there is any difficulty about the child's school work, the mother can easily get to school to talk with the teacher or the principal. The other children in the neighborhood go to the same school. The parents' association consists of people many of whom are neighbors, and therefore the parents feel at home there.

A rather common view of the importance of a "good" neighborhood school was reported recently by Robert Coles from an interview he had with a middle class housewife and mother who lived in a suburb of Boston, where a few Negro pupils were attending the school, coming out from the Boston ghetto.[1] She was very much opposed to having these children in the school her four children attended. She said,

> Well, I think children are very sensitive to the people they're with, and I think they learn better when they're in a class with children they know, and who live near them, and who share the same "outlook," you might call it. You can't expect children to adjust to all sorts of strange people who have different habits and think about different things. I say this integration business is for adults to settle. Until we do, let's leave our children out of it.
>
> . . . If the Negroes come out here it wouldn't make any difference how hard my kids would work—the rug would be pulled right out from under them. The school would lose its reputation. We'd be one

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[1] Robert Coles. "White Pieties and Black Reality." *Saturday Review* 50: 57-59; December 16, 1967.

of those "troubled" schools, full of fights and suspicion, and the teachers would lose heart. You can't always prove what goes to make a reputation, but you sure know when you're losing one.

The only class of parents in the United States which does not seem to care for the neighborhood school is the well-to-do, high-status family which wants a selective school for its children and can afford to transport them or pay for their transportation to a more distant school. It is interesting that the neighborhood school is valued less highly by parents in most European countries. They often "shop around" for a state school that may not be the closest to their home. But the great majority of American parents will send their children to the nearest school unless they have reason to believe that this school is not good for their children.

As educators see the neighborhood school, it has several advantages. Since it does not require transportation, it is likely to be the most economical and efficient way of providing basic instruction at the elementary level. Since it serves a local neighborhood where children and parents are already fairly familiar with one another, the parents can be brought into close cooperation with the school more easily than they could if they were widely scattered. Furthermore, the child is more likely to have a feeling of being known and of being wanted in the school, since it is a part of his neighborhood. If the neighborhood is reasonably well mixed in the socioeconomic and racial sense, this school is likely to help children develop democratic attitudes. But this combination of democratic social mixture is not likely to be found in most city schools.

Another great advantage of some neighborhood schools, from the point of view of the educator, is that they can also serve as *community schools.* A community school is defined pretty much as it exists in Flint, Michigan. It serves the local neighborhood as a community center for a variety of educational, recreational, and social activities that meet the needs of all ages.

The Neighborhood School in Modern Society

There is an impressive amount of evidence that citizens feel powerless in the contemporary big city. Their voices are drowned in the confusion, or they may have no opportunity to speak on behalf of their own and their neighborhood interests. One way to help them find themselves as citizens is to maintain a local community school with a high degree of local autonomy.

Weighing the contemporary trends toward greater urban complexity and toward socioeconomic stratification within the metropolitan areas of the country, many serious students of American education have concluded that the neighborhood school has outlived its usefulness in the American city. They came to this conclusion for the following reasons:

- First, the facts of socioeconomic and racial stratification make a mixed neighborhood school very difficult to create and maintain. This is certainly true, but there are various degrees of mixture, and it may be that the degree of mixture that could be obtained and maintained through serious attempts at city planning, housing for a mixed income group, and skillful use of bussing would be worth the effort.

The most radical critics of the neighborhood school argue for the educational park—a giant educational unit for 15,000 to 30,000 students which would serve a large enough residential area to be truly a cross-section of the city. The elementary school in an educational park would be a set of units, each small enough to permit the students to feel that it was about their size, and each containing a socioeconomic mixture. In view of possible parental objection to sending their younger children several miles to an educational park, some park proponents favor a set of K-4 schools of the neighborhood type, feeding into an educational plaza containing middle school, high school, and community college.

- The second objection to the neighborhood school is that it may give the pupils an oversimplified view of society and thus prepare them poorly for the complexity of contemporary life. The prophets of the future society write about the "supercity" in which most of us will live. Such a setting may require a more adaptive personality than the one we now regard as the best kind for competence in a democratic society. An extreme statement about the kind of personality needed in the "post-industrial cybernetic society," published in *The Futurist: A Newsletter for Tomorrow's World,* goes as follows:

> The cybernetic world of the immediate future will be one in which the individual, freed from the necessity of work, will be freed also of all other restraints which have been associated with work. He will have the potential for enormously more physical and psychological mobility than he has at present, and it is probable that he will be subject to a range of sensations that are vastly more powerful and varied than we can imagine at present. In order to withstand and cope with these sensations, he will have to develop a personality that is maximally free

of rigidity; a personality that has as its core value that which we would now call valuelessness—the principleless ability to adapt and adjust, chameleon-like, to any and all situations; the ability to receive and assimilate contradictory or even unrelated stimuli; the ability to accept and appreciate any act, utterance, or thought that is humanly possible.[2]

Other "prophets" protest against this trend, which they recognize in contemporary society. For instance, Paul Goodman, in a challenging speech to the National Security Industrial Association, commented on ways of improving the quality of man's environment. He said, "In a society that is cluttered, over-centralized, and over-administered, we should aim at simplification, decentralization, and decontrol."[3] He might prefer the neighborhood school as a means of simplification and decentralization, but he would have to solve the problem of a socially integrative experience for children in a segregated and complex society which denies them this experience unless they take part in a school that is complex.

The Future of the Neighborhood School

The more we think about the advantages and the disadvantages of the neighborhood school in a complex city, the more we realize that we are caught on the horns of a major dilemma, and we will not soon solve it.

There is a deep attraction of the local neighborhood school for parents, and this persists and even grows as the city becomes more complex. Parents would like to have the local school for its physical proximity to them and their feeling that they can manage it. They believe that the local school can bring the complex world into the child's grasp through the use of television and films and books and field trips.

Yet there is a major defect in the education of a child who is limited to contacts with other children of his own social class and color when he attends school. He should experience more human variety.

At the same time there is a dilemma for the school board and the school administrator who want to operate an efficient school system. They gain economy and efficiency if they go to larger school units and abandon small neighborhood schools. At the same time, they tend to develop a rigid bureaucracy with the same course of study, the same textbooks, and the same standards for all schools in the system.

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[2] James Allen Dator. "Valuelessness and the Plastic Personality." *The Futurist* 1: 53-54; August 1967.

[3] Paul Goodman. "A Causerie at the Military-Industrial." *New York Review of Books*, November 23, 1967. p. 17.

The future of the neighborhood school in the big cities is problematical. Let us set up hypothetical situations which probably could be discovered in and near all of the big cities of the country. Let us ask whether a neighborhood school is likely to be maintained in each situation and how it might be maintained with maximum educational value.

Integrated Residential Neighborhood

There is a growing number of local neighborhoods within a big city which are integrated racially and consist mainly of upper-middle and lower-middle class people with a few working-class families. The great majority favor integration, and they want their children to attend an integrated school as long as it is, in their judgment, "good." This is the easiest situation in which to maintain a neighborhood school, since nearly everybody, parents and educators alike, favors it. True, they recognize that their school does not contain many children from working-class families and no slum-dwellers are in the school. Yet they have gone as far toward full social integration as the present residential patterns of the city permit, and they are likely to be content.

The number of such neighborhoods is increasing slowly, both in the big cities and in suburbs. They may increase more rapidly if the public school system works to make the schools especially attractive, and if the school system has a policy of maintaining racial balance in such schools.

The people in such a community recognize the need to relate their children to the complexity of the city and the metropolitan area and may welcome the participation of their children in a Learning Center to which they can go by bus with a frequency that depends on their age and other matters which will be discussed below. The Learning Center is conceived of as a supplementary arrangement which serves to extend the neighborhood school into the metropolitan area.

Princeton Plan or Paired Schools

A modified neighborhood school may be created where two contiguous elementary school attendance areas are populated by different racial groups. One is mainly Negro, and one is mainly white. The people of the two neighborhoods wish to live in harmony, and they favor racial integration in the schools. Consequently they combine the two schools into a single neighborhood school area.

The Princeton plan arrangement sends the first three or four grades of the enlarged area to one school and the next three or four grades to the other school. This plan is working in a number of places where local sentiment favors integration and where the school staff and the parent leaders have had the skill and patience to work out the details of making a truly integrated school out of each of the paired schools.

In this approach, too, the schools may make use of the Learning Center to widen the experience of children.

Learning Center as Supplement

Often, in a big city, the local neighborhood is segregated economically or racially, or both, and there seems to be nothing that can or should be done to change this situation in the near future. In other words, this is a typical situation for the vast majority of schools in the big city. The teachers and administrators, as well as some, at least, of the parent leaders, recognize that their neighborhood school is too simple for their children to encounter much of the complexity of the city.

Consequently, they use a Learning Center in their section of the city for a good part of the school week. The Learning Center is a building with a variety of facilities for learning that may not be in the neighborhood school. It has a stage for dramatics, a room for language and speech instruction with tape recorders, a good school library, a variety of teaching machines, and an array of learning programs. It has a large recreation area, and several buses to bring children to the Center and to take them on trips in the metropolitan area. It has a small permanent staff, and the teachers of the neighborhood school have learned to use some of the equipment in the Center.

The Center is scheduled so as to bring children of various social and ethnic groups together and to encourage them to associate in many of the activities. Also, the Center encourages a limited amount of competition between neighborhood schools, in athletics and academic "games." The relation between the neighborhood school and the Learning Center is somewhat like that of a homeroom to the other classrooms of a large departmentalized school. The neighborhood school is a kind of homeroom, which specializes in teaching the skill subjects of reading, writing, and arithmetic.

As children get into the middle grades, they spend larger proportions of their time at the Learning Center. In fact, a middle school or a junior high school may serve as a Learning Center, with a section of its plant used for this purpose. The younger children who come once or twice a week gradually come to think of the Center as their school, and move easily into it for intermediate or junior high school work.

The concept of a Learning Center is being developed in a number of cities under Title III of the Elementary and Secondary Education Act as a supplementary education center. It may specialize in providing a place for experience in arts or music. It may have a substantial afternoon and Saturday program of classes for children with special interests.

There are two problems to be surmounted in the process of establishing a Learning Center. One is to secure an adequate building. Often an old building is reconditioned for this purpose, and this may work out fairly well. But if a new building can be constructed partly or entirely for this purpose, it may serve to attract students and to make the Center a more highly effective integrative force.

The other problem is that of transporting children from their own home neighborhoods to the Center. This can be done fairly easily with school buses during the regular school day, but it requires special thought about scheduling and routing buses in order to make transportation available after school hours or on Saturday.

The Large Ghetto

Many neighborhood schools are located in large segregated Negro residential areas. This is a special case of the preceding situation. There is no realistic possibility of developing an integrated community within the next ten years. Here we have two possible cases.

First, in case the Negro neighborhood wishes as much social integration as possible, the device of the Learning Center should serve to supplement the neighborhood school much as it does for the segregated white group. At the same time, the local school should have an integrated faculty.

Second, the value of a Center may be questioned where there is strong sentiment for local community control of the school with the form of *apartheid* just now favored by the extreme Black Power advocates. Here the school is a self-conscious Negro neighborhood school. The local community demands and assumes autonomy in matters of choice of principal and teachers and adaptation of the curriculum to serve Negro needs. This kind of school will tend to maximize segregation. It is not clear whether it will make use of an integrated Learning Center.

In the writer's judgment, this type of school is bad for Negro students and bad for the larger community. No *disadvantaged minority* can gain in economic or intellectual or social participation in the larger society by creating and maintaining its own school system, even though it does so of its own choice. Still, there may be some gains in terms of self-respect and experience in assuming responsibility, and we should be alert to the possibility of such gains as we observe and evaluate the experiments in Negro autonomy that are now taking place in New York City and elsewhere.

We may well remember that certain disadvantaged Catholic minorities appear to have made good use of segregated parochial schools from the point of view of building morale and maintaining religious solidarity, while they were at the same time increasing their economic and intellectual participation in the wider society.

However, in the writer's judgment, there cannot be a really good all-Negro neighborhood school in the United States today. The average Negro man or woman would probably say that the best thing in life would be to live in a good house in a nice neighborhood with a real good school. And a few middle-class Negro neighborhoods in big cities make this seem almost a possibility, though middle-class Negroes would much rather live in an integrated community.

In any case, the majority of Negro middle-class people as well as the respectable working-class Negro families live in neighborhoods with run-down and overcrowded tenements, where the children are not allowed out of the apartment except during school hours. At other times, unless the parents are there to look after them, they are warned to stay off the street and in their own apartments. Few of them go to settlement houses. Teen-agers are equally limited, unless they join gangs which control their home territory.

The "Small Ghetto"

It is different if the school is located in a small segregated Negro residential area. In other words, the city may have a "small ghetto" of no more than a thousand Negro elementary grade pupils. In this situation there will likely be one or two segregated Negro neighborhood schools.

The question arises, is it wise to abandon the Negro neighborhood school and to disperse the Negro pupils to the surrounding white neighborhood schools? This has been done in many small cities and in some larger places that have a small Negro ghetto. An example is Evanston, a suburb of Chicago, which recently distributed its Negro pupils among about seven elementary schools, providing bus transportation as necessary and placing no more than 20 percent Negro pupils in a school. The former all-Negro school was turned into an integrated "model school" open to voluntary enrollment. This school filled up immediately. Of course, it was not a neighborhood school; it was more like a full-time Learning Center.

In this case, the neighborhood school concept was abandoned for most Negro pupils. Only a relatively small number attend the school nearest their homes. The advantages of integration were judged to be superior to the advantages of the neighborhood school when a choice had to be made between the two.

This same situation is now being worked out in a number of places, where the minority enclave is small enough to be dispersed to neighboring schools. For example, a suburban school district on Long Island is about 80 percent Negro and has about 2,300 school children. Its tax resources are relatively small, compared with the resources of the more affluent white residential districts that surround it. Here the County Human Relations Commission and the NAACP have petitioned the State Department of Education to merge the Negro district with its more affluent neighboring districts. Such a merger would probably result in greater racial integration, though there still would remain several schools with a heavy Negro majority, due to the relatively large residential ghetto. Some of the Negro leaders in the district argue that they can achieve a "black model school system" if permitted to develop their own system with substantial state and federal aid.

In the "small ghetto" situation, the wishes of the local Negro community may determine whether there will be segregated schools. The school board is likely to distribute the minority group among surrounding schools, thus violating the Negro neighborhood community. This is a problem for the Negroes themselves.

In a Large Building Project

There are some neighborhoods in congested areas of cities which have very high land values, such as New York City, where the problem of a site for a school may be solved by placing the school within a large residential-commercial complex. Thus the school becomes an intimate part of a neighborhood.

Such a school is now being planned jointly by the school system and the land use commission of New York City. The school will occupy one or two floors of a high-rise building. Other public facilities may also be in the complex, such as a branch of the public library and a swimming pool.

The Middle School

A middle school with grades 5-8 or 6-8 may provide many of the advantages of a neighborhood school and at the same time provide greater socioeconomic and racial integration than would several separate K-6 or K-8 schools.

In this case it is clear that the definition of a neighborhood school is relative to the age of children. Older children can walk farther to school than younger children. Their "effective neighborhood" is larger. Therefore, a middle school might draw pupils from as many as four K-4 neighborhood schools. It might be located so as to serve children from quite different socioeconomic and racial groups.

The middle school is the most popular of the new neighborhood school types. Its neighborhood is large enough to encompass some socioeconomic variety, as a rule. Since it also provides superior facilities for intermediate grade instruction, it serves the purposes of social integration and also the cause of better instruction.

Related Problems

The future of the neighborhood school is bound up in several controversial issues that are slowly being settled as the American society works through what we call "the crisis of the cities." School policies are being worked out as ways to help solve the problems of the big city. As new school policies are adopted, they will bear on the future of the neighborhood school.

Decentralization in Big Cities

For several reasons the big city school systems are now under pressure to decentralize their administrative controls, so that more of the major decisions are made outside of the central administrative office. One of the reasons is that the conditions of education are so different in different areas of the big city that textbooks, teaching methods, and teacher personnel must be different, and this need seems not to be easily understood in a big central administrative office. Another reason is that during a time when innovation and experimentation are important, a large organization finds it necessary to establish a variety of centers of innovation where different people are at work, rather than to handle innovation and experimentation under a single administrative head.

In response to this pressure a number of big city school systems have worked out ways of increasing the decision-making responsibilities of regional and district administrators. Detroit and Chicago have done this recently. The most striking example is New York City, where the State Legislature has commanded the city government to find a way of decentralizing the administration. In response, the Mayor's Advisory Panel on Decentralization of the New York City Schools has proposed that the New York City school system be broken into local or community school districts, in number between 30 and 60, each with its own school board and its own superintendent. The Bundy report, as it is called (from McGeorge Bundy, the chairman), is now being discussed, and certainly will lead to some degree of decentralization. The separate school districts would range in size from 12,000 to 40,000 pupils, "large enough to offer a full range of educational services and yet small enough to permit administrative flexibility and proximity to community needs and diversity."

Although these are called "community school districts," it is clear that they have little direct implication for the neighborhood school. This writer believes that such districting will tend to preserve the "neighborhood school." Neighborhood school advocates are more likely to be heeded by a school board representing a community of 200,000 than when the school board serves a community of 8 million.

Community Districts in the Big City

A much smaller sub-community of a big city might conceivably be given administrative autonomy, and this has happened to the local communities in New York City. During 1967, three small "pilot" community districts were set up with a considerable amount of autonomy and a great deal of local parent responsibility. One of them was Intermediate School 201 and its four feeder elementary schools in East Harlem. Another was in Brooklyn, in the predominantly Negro area of Ocean Hill-Brownsville. Still another was in the lower East Side of Manhattan—the Two Bridges district which is racially heterogeneous and contains a number of Chinese children. The Brooklyn district has two junior high schools and five elementary schools, with about 8,000 pupils. The Two Bridges district has 5,000 pupils in four elementary schools and a junior high school.

It is clear that none of these communities has a balanced racial composition. Only Two Bridges has as many as 10 percent white pupils. Therefore, the districts cannot innovate with social integration, but they are in a position to show how the local community can make administrative decisions concerning its own schools. With the aid of funds from the Ford Foundation, local organizations were formed in the three districts, headed by governing boards of parents who were elected locally. In Ocean Hill-Brownsville, 3,500 parents registered to vote out of 12,000 eligible, and 1,100 actually voted for the first Governing Board. Two Bridges did better, with 1,900 parents voting.

The Ocean Hill-Brownsville governing board appointed a 44-year-old Negro who was an assistant principal to the $20,000-a-year post of unit administrator. The governing boards have been fairly free to select principals and teachers, partly because a number of the people who had been there asked for transfers, not liking the new situation. In Ocean Hill-Brownsville, Mr. McCoy appointed one white, one Puerto Rican, and three Negro principals. Seventeen of the 18 assistant principals (all white) requested transfers. As the year 1967-68 wore on, one white man and one Chinese man from outside the city system were nominated as principals of two of the schools, one of them a new school.

There has been a great deal of conflict among the parents in these three districts, as they found themselves with more responsibility than they had been accustomed to. With the experiment only half-way through its first year, it is too soon to draw conclusions.

This kind of local self-government for small areas containing a few schools will probably continue to be tried in low-income sections of big cities, as part of the general movement to ask low-income people to take more responsibility for various aspects of local neighborhood government. But its success or failure will probably not be relevant to the future of the neighborhood school as defined at the beginning of this paper.

The Educational Park

At this writing there is much talk about the educational park but very little action. If we define an educational park as a complete system from kindergarten or first grade through grade 12 or 14, on a single plot of land, there is none in existence except in rural areas. The closest to realization of the park concept is found in medium-sized cities such as East Orange, New Jersey. This city has a population under 100,000 and is seriously considering the location of all elementary schools together with junior and senior high school on land that is fairly near to the center of the city. In the larger cities there is talk of enlarging certain high schools and of bringing high schools and middle schools together on the same campus, but no large city has committed itself to a true educational park.

The main argument in favor of the educational park is that it may provide a single school or school complex to serve all of the students of a community or to serve a cross-section of them. In either case, it promotes social integration. It may also have other advantages, such as a wider variety of educational facilities for elementary school pupils, a better program for children with special talents or special handicaps, and a more efficient use of space and personnel.

The educational park is the principal threat to the neighborhood school. Its advantages may outweigh the advantages of neighborhood schools, but there has not yet been a clear contest in which public opinion could choose between the two concepts.

The Coleman Report

The Report to the U.S. Civil Rights Commission on Equality of Educational Opportunity (the Coleman Report)[4] has something important to say about the neighborhood school, though this can only be inferred from the document itself.

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[4] See summary report, *Equality of Educational Opportunity.* Washington, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1966.

Studying the relations between scores on school achievement tests and a variety of factors in the student's environment that might be expected to influence school achievement, Coleman found that the most important single element is the socioeconomic status of the family. After controlling statistically for socioeconomic status, he did not find any other factors that approached this one in significance. For example, the age of the school building, the amount of graduate education received by the teachers, the size of the school library, and various factors in the physical condition of the school showed very little relation to school achievement.

However, Coleman found that children from poor families who attended school with children of middle and high income families scored higher than other children of equally poor families who attended school with other poor children. We suppose this is due to the expectation which pupils and their teachers have of their achievement; this expectation is higher in a middle-class area school than in a working-class area school. The child from a low income family, if he goes to school in a class where the majority of the children are middle class, gets some of their attitudes toward school and toward study, and thus works harder and achieves more.

Generalizing from this finding, we may say that school achievement will be maximized if as many working-class children as possible are placed in schools and classes where the majority are middle-class children.

This state of affairs is difficult to achieve in the big city today because the slums are so large that a child living there can hardly get away from them. A Negro child living in the middle of Chicago's South Side ghetto can walk five miles and not pass a home of a school with white children.

Thus there seem to be good reasons for sending children from low-income neighborhoods to schools in middle-income neighborhoods, always keeping them in the minority in such schools. The neighborhood school would seem to be good for children in middle- and upper-income neighborhoods but not good for children in low-income neighborhoods.

Until such time as social urban renewal brings back multi-racial and multi-income neighborhoods, there are good reasons for reducing the amount of a child's time that a low-income neighborhood school consumes. Perhaps such a reduction can be accomplished through such devices as the Learning Center and bussing of lower-status children to higher-status schools.

In conclusion, the American common school of the nineteenth century, the values of which we all respect, was a neighborhood school. It has been disappearing steadily since 1900, and we are now searching for its equivalent in the complex urban society of today. The common school was established largely within the white Protestant group. Thus it was at one and the same time a success and a failure. It helped to unite and to integrate the white Protestant society. At the same time it excluded Negroes, and many Catholics did not find it satisfactory. Catholics responded by creating their own neighborhood schools, which apparently have served them well. Negroes, at a much greater disadvantage, were often relegated to inferior neighborhood schools, from which they are now emerging. At the same time, the Black Power movement tends to work toward racially segregated neighborhood schools.

We are convinced that the sense of community and of belonging to a community is served by the neighborhood school; but the residential segregation of the modern metropolitan area separates and segregates children by socioeconomic status and skin color. Therefore the neighborhood school does not now serve well to help American children develop a sense of the more complex democratic community which suits the modern society.

Can the neighborhood school concept be developed so that it can usefully serve the contemporary society? We believe that it can, but that this will take a great deal of determination and skill on our part as educators.

The Dream

Seeking New Design Alternatives

Paul R. Klohr

WE KNOW that each generation tends to highlight its current problems and to assert that these problems are more crucial than those of any other time and place. One might expect, therefore, that, by attempting in 1969 to sense desirable directions for elementary curriculum in the years ahead, curriculum leaders are likely also to overreact to the contemporary scene. With this caution in mind, let us see if there are some developments that make 1969 different.

Of the many factors one might cite, two seem to be especially significant as we focus specifically on curriculum design. The first can be characterized as a growing recognition of the need for new solutions to what might be called the design problem. The second has to do with the role of the curriculum planner as he concerns himself with design matters in the whole future-planning context. Both of these factors will be treated briefly as a background for a discussion of the design proposal itself.

The Design Problem

Curriculum reform of the late 1950's and of the 1960's has resulted in many innovations both in content and process. That this reform has given us excellent new resources to use if we can but learn to use them with insight seems no longer to be a debatable matter.

However, as the innovations come, subject by subject or one organizational scheme after another, fragmentation of the curriculum as a whole remains. Indeed, fragmentation has been increased by the piecemeal addition of this and that "new" subject or organization, frequently in addition to rather than in place of the old.

Fragmentation is, of course, only one such problem. Eash[1] identifies no less than eight critical problem areas which he calls macroproblems as contrasted with the "micro" aspects of curriculum. These range from the persistent problem of achieving balance to a cluster of concerns he describes as "curriculum dissonance."

Thoughtful observers of the current state of the curriculum field document, time and again, in a similar way, our need to grapple with these matters in order to make better use of our new resources. Foshay,[2] for example, calls for us to subject "the shape of the curriculum as a whole" to the kinds of analysis and criticism its various parts have undergone in the past ten years. Expressed with a new sense of urgency, such concerns help us define what we have called here "the design problem."

Coping with this problem is made difficult by the fact that few schools have faced the matter squarely as they have undertaken curriculum development in practical situations. They simply have been doing other things that have seemed at the time to have higher priority. Indeed, direct observations made on visits to so-called "lighthouse" schools, which are seen as highly innovative, seem to support this generalization. One often finds a highly skilled staff with strong leadership, which has become quite sophisticated with the logistics of organizational arrangements. In these situations there tends to be a lexicon of new, or redefined, terms which describe the logistics and which do relate and equate to the actual practices under way. Frequently, the operations touch on some aspects of curriculum design, but design itself is rarely a direct concern. An examination of the content of many hours of curriculum planning sessions in elementary school settings undergirds this contention.

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[1] Maurice J. Eash. "Guidelines for Preparatory Programs for Supervisors and Curriculum Workers." In: *Toward Professional Maturity.* Roy P. Wahle, editor. Washington, D.C.: Association for Supervision and Curriculum Development, 1967. pp. 21-22.

[2] Arthur W. Foshay. "Shaping Curriculum: The Decade Ahead." In: *Influences in Curriculum Change.* Glenys G. Unruh and Robert R. Leeper, editors. Washington, D.C.: Association for Supervision and Curriculum Development, 1968. pp. 3-12.

Moreover, curriculum as a field of inquiry has not developed the conceptual tools required to do the kinds of analysis and criticism it now must undertake with regard to the design problem. Most of the design constructs available are those that might be thought of as a part of the conventional wisdom of the field—ideas, concepts, design models that evolved from curriculum development efforts of 20 years ago or earlier.

Noting this is not the same as asserting that we cannot profit from an examination of design matters in their historical contexts. In fact, one large effort that should be made to give us the help we need today must involve historical analysis. We do need to reexamine and to understand more fully the problems of purpose, of ordering, and of synthesis as aspects of design in the work of thoughtful educators caught up in the curriculum problems of their own time.

However, we need more adequate conceptual frameworks, or what we are calling "conceptual tools," for engaging in such reexamination as well as for handling current and future efforts. Some promising beginnings toward this end have been made. For example, several recent speculative curriculum proposals have certain design elements in them, including the work of Phenix; of Broudy, Smith, and Burnett; and that of King and Brownell.[3] While these proposals do not attack directly the kinds of macroproblems Eash has identified, they do give us some of the additional theoretical constructs we need for use in generating new designs at the elementary level. In short, they help us confront some of the persistent design matters in fresh ways. Or they suggest redefinitions of certain of the curriculum design concepts that have evolved from earlier times.

One of the most effective examples of an individual addressing herself to some of the problems of design is the rather concrete proposal formulated by Alice Miel[4] in the 1963 Association for Supervision and Curriculum Development Yearbook. And Professor Miel's paper in this present publication is, again, a significant demonstration of the kind of thinking that best characterizes thoughtful attention to curriculum design. Such efforts, however, are few and far between, and those that have been formulated have not yet been field tested.

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[3] Philip H. Phenix. *Realms of Meaning: A Philosophy of the Curriculum for General Education.* New York: McGraw-Hill Book Company, Inc., 1964; Henry S. Broudy, B. Othanel Smith, and Joe R. Burnett. *Democracy and Excellence in American Secondary Education: A Study in Curriculum Theory.* Chicago: Rand McNally & Company, 1964; and Arthur R. King and John A. Brownell. *The Curriculum and the Disciplines of Knowledge: A Theory of Curriculum Practice.* New York: John Wiley & Sons, Inc., 1966.

[4] Alice Miel. "Knowledge and the Curriculum." Chapter 4 in *New Insights and the Curriculum.* Alexander Frazier, editor. Washington, D.C.: Association for Supervision and Curriculum Development, 1963.

Part of the difficulty might be that we have been unrealistic about how theory in education, and more particularly in curriculum, can be generated. In keeping with the trend in the social and behavioral sciences, we have sought to be increasingly scientific. Being "scientific" has sometimes led us to an unwarranted reliance on induction as the only method for generating useful curriculum talk.

In such cases, we seem to have forgotten that few, if any, important theories in the sciences have been generated on a purely inductive basis. Unless guided by some prior ideas of what facts are likely to exhibit orderly relations, as we are all aware, a collection of facts, however extensive, can remain only useless curiosities. Winthrop[5] calls this tendency to overlook prior ideas a "revolt against intellectual synthesis." He criticizes a molecular approach to the study of a problem, which excises the problem from its larger, more complex context, without, in turn, paying attention to that context.

Some of our most reflective thinkers also share this concern. Such individuals are seeking social indicators in the form of numerical indices to develop a means by which society as a whole can assess where it is and provide a basis for projecting desirable next steps. Kenneth Boulding,[6] for example, calls attention to the danger that subordinate goals, because they are clear, apparently objective, and quantitatively measurable, will become something more than subordinate.

We cannot explore here various theories of the nature of knowledge which an extension of this discussion would entail. However, it is appropriate to note some of the implications that seem to flow from this perspective. The position is taken that conceptualizations of curriculum design, in order to be useful in the immediate future, must reflect what some would call compromises. These would be seen as compromises by those who equate sound theory with instrument-mediated measuring operations.

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[5] Henry Winthrop. "The Revolt Against Intellectual Synthesis." *Teachers College Record* 69: 255-62; December 1967.

[6] Kenneth E. Boulding. "The Ethics of Rational Decision." *Management Science* 12: 161-69; February 1966.

In short, this view of efforts to talk more effectively about curriculum design, and, in turn, to deal more effectively with the design phenomena will mean, among other things: (a) that we are willing to recognize that undefined, primitive entities will precede the formulation of curriculum design data language; (b) that data language terms will have reference to both logical and empirical procedures instead of solely to empirical referents; and (c) that there must be some kind of prejudgment to guide our choice of the logico-empirical operations of what kinds of entities are most likely to exhibit orderly relations among curriculum design phenomena.

A helpful explanation of this approach has been made by Glaser and Strauss. As sociologists concerned with strategies for qualitative research, they call for the "discovery of grounded theory."[7] In this call, they assert the primacy of the generation of theory in contrast to its verification. Their discussion of modes of conceptualization within the theory-generating process seems especially relevant.

These are but some of the concerns related to the design problem. They call not only for a recognition of the problem, as such, but also for some different ways of pursuing inquiry in the field. Improved practice will increasingly depend on the fruits of such inquiry.

Let us turn next to the context in which we are likely to find ourselves working as we engage in generating more adequate theory or as we attempt to use such theory to help us see better what we are doing. In curriculum development this context is future-planning oriented.

The Future-Planning Context

There is a renewed interest in future-planning efforts and in relating these to educational planning. Future planning itself is not, of course, a new venture. Over the years, various approaches to it have been taken, ranging from science fiction writing and the creation of utopias to such massive projects as Bertrand de Jouvenel's Futuribles project in Paris.

A recent undertaking that represents an organized, thoughtful approach is the Commission on the Year 2000, chaired by Daniel

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[7] Barney G. Glaser and Anselm L. Strauss. *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Chicago: Aldine Publishing Company, 1967.

Bell and supported by a Carnegie grant to the American Academy of Arts and Sciences. A work-in-progress report on this Commission highlights the many problems and issues in conjecturing about the shape of things to come.

The value of such conjecturing is unquestionably significant for education. We can, indeed, say with Erik Erikson[8] that we are helping to make youth in the Year 2000 what it will be by the kinds of questions we ask now. We are preparing individuals for a future society, and we are also shaping the nature of that society. This latter point must be more fully recognized.

As Silberman[9] points out, the question George S. Counts raised in 1932 with regard to whether or not the school dared to build a new social order was somewhat academic, in that technology was not available at that time to implement any such proposal. Now it is, and as educational technology advances, it will undoubtedly be used to change human behavior in the direction of national objectives. Curriculum planning can no longer treat this change as if it were an academic, somewhat philosophical, matter.

In the midst of the many future-planning efforts about us today, educators invariably seem to seize upon those projections that have to do with technological advances. That is, most "dreaming" about the future school or the curriculum for the Year 2000 tends to be shaped by technological successes or the anticipated trends these successes suggest.

We visualize computerized learning centers, for example, that are capable of "individualizing" learning in virtually every field. However, as Frazier points out, despite this glowing success we have an uneasiness—a deep down recognition that to achieve this success, we have also altered our view of what education should be. In his terms, we have "reduced it, limited it, fundamentalized it." [10] Hence, his plea for our consideration of the larger learnings.

In effect, we may need, as Erikson suggests, to ask different kinds of questions. The basic stance may not be the familiar set of trends that one uses to respond to the question: "Where is technology taking us?" but rather, "Where are *we* taking technology?" The shift would then be to a set of demands we want to make of the future. Basically, these have to do with the right to fulfill our human potentialities. And as these demands are met, there will be other needs, for human nature itself will be changing, developing, maturing.

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[8] Erik H. Erikson. "Memorandum on Youth." *Daedalus* 96: 860-70; Summer 1967.

[9] Harry F. Silberman. "Educational Policy—An Evaluation." *Educational Technology* 7: 13-17; November 15, 1967. p. 17.

[10] Alexander Frazier. "Individualized Instruction." *Educational Leadership* 25: 616-24; April 1968.

We have hardly begun to visualize the consequences of such a shift for curriculum planning. Fortunately, some additional resources may become available. Five new pilot research centers have been established by the U.S. Office of Education to engage in educational policy research, in effect to "invent alternative futures and map out paths necessary to reach them." Two of the five are to continue to function over an extended period. At least one of these centers, as reported[11] in an early prospectus for its work, plans to focus on the needs of individuals in what it calls a person-centered approach. To achieve this focus, the Center posits certain need-satisfaction patterns and identifies several life styles that individuals might typically use to fulfill these patterns.

In short, the work of this pilot center rests on certain basic assumptions regarding human nature which are not, at this time, subject to direct experimental verification or refutation. It would seem that some such approach to the future is crucial if curriculum planning is to be more than an extension of what we have already learned to do well. This approach is, of course, in direct contrast to an extrapolation of current trends.

When a curriculum planner, or an individual concerned with curriculum design, adopts this position, it appears to some that he is caught up in taking sides on the old science *vs.* the arts dilemma. However, our concern is not one of the gap between the sciences and the arts in the sense that C. P. Snow and others have expressed it. Rather, the concern is between technology in opposition to science *and* the arts.

From our view, it is technology, not science, that dominates our culture. And it is the concepts of this technology that dominate curriculum planning and design. We must, in effect, cultivate a different mind set. The literary critic, Sypher,[12] speaks of "the menace of the technological frame of mind" which assumes that we can get the results we seek if we but use the right method. And by using the right method, we can rule out the unexpected

[11] "Educational Policy Research Center—Informal Progress Report." Stanford Research Institute, Palo Alto, California. Mimeographed; 22 pages; August 1967.

[12] Wylie Sypher. "The Poem as Defense." *The American Scholar* 37: 85-93; Winter 1967-68.

and can predict human behavior so accurately that even those who resist a given program can be rendered ineffective in advance.

As Sypher says, "Techniques, in brief, can absorb our very hostility to techniques because the technician has already calculated our resentment and provided for it in his program. Thus we can be stripped of choices, since the technician can deceive us into believing we are free when we are not."[13] In short, the technician dreads surprises. He predicts everything and thereby discovers nothing new. An overemphasis on the precise statement of behavioral goals for *all* learning outcomes as a necessary step in the curriculum development process is an example of this phenomenon.

At least two implications are clear for our thinking about curriculum design matters in a future-oriented context. We must develop constructs that give us alternatives. We must also pay closer attention to the assumptions we are making about the nature of man and his development as we conjecture about the future.

To bring into focus our view of the future as it relates to education, the following assumptions seem warranted:

1. Education in the future will become a lifelong pursuit, a pursuit not restricted to schools and classrooms.
2. Education will come to be valued as experience in and of itself rather than as preparation for something or some future time.
3. Education will be directed toward the larger learnings that include dimensions of humanness beyond the cognitive; and in approaching these ends, it will be concerned with consciousness-expanding experiences.
4. Education will involve the students more fully in decision making.

Obviously, other assumptions could be made, depending upon one's value framework and the level at which the assumptions are to be stated. Yet these may serve to illustrate our contention that future-planning efforts and curriculum development efforts both require a "pushing back" to basic assumptions. Moreover, curriculum design questions are, in turn, related to underlying assumptions of this general order.

Recognizing the design problem and sensing some of the difficulties of working in a future-planning context, let us turn now to a specific design proposal. This proposal will be developed in broad, scenario form.

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[13] *Ibid.*, p. 86.

A Curriculum Design Scenario

A scenario seems to be an appropriate form for seeking new design alternatives. If useful, it will suggest the broad outlines of a plot in which the drama takes place. In this case, the drama might be viewed as the emergence of a pattern of relationships among curriculum elements. This is what "design" is taken to be in this discussion. The pattern would be shaped by the basic assumptions that underpinned the effort. And design concepts, or constructs, would be generated to help us both "keep track" of what we were doing in our curriculum development procedures and also to plan more desirable operations.

In effect, if our dream about the elementary curriculum for the future is to be more than mere science fiction, the proposal suggested by this scenario requires the curriculum planner himself to take the stance of a theory builder. This is difficult for us to do because we tend to see ourselves as consumers of theory generated elsewhere, perhaps some "grand theory" from sociology or other related behavioral science.

The papers prepared by Professors Margaret Ammons and Alice Miel are both excellent examples of the work of individuals functioning as theory builders. They have raised basic questions, in fresh ways, about curriculum development phenomena and have suggested some conceptual tools for us to continue such work.

To take a critical look at curriculum design for the elementary school, we propose that curriculum be visualized as having two distinct, yet interrelated, dimensions. We propose to call these the *energizing* and the *integrating dimensions.*

No great claim is made for the terms we have selected to label these dimensions, but we are convinced that the dimensions are there and that they serve as useful constructs for coping with certain problems of design. For purposes of this scenario, then, let us use these dimensions and see what kinds of questions they permit us to identify and what possible solutions they may suggest. To be sure, much more needs to be done before we can ever assert that these are valid terms in a grounded theory—in the sense, for example, that Glaser and Strauss think of such theory. Perhaps they are more appropriately thought of as "sensitizing concepts" in some such paradigm as Daniel E. Griffiths uses[14] to visualize the levels of theory in the field of educational administration.

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[14] Daniel E. Griffiths. "The Nature and Meaning of Theory." Chapter 5 in *Behavioral Science and Educational Administration.* Sixty-Third Yearbook, Part II, of National Society for the Study of Education. Chicago: University of Chicago Press, 1964. p. 104.

The idea of these two dimensions as design elements to be used in developing an elementary school curriculum does seem to free us from some of the constraints that have characterized curriculum design thinking. The traditional terminology "common learnings" and "specialized learnings" serve as an example of terms with real constraints. Yet time and again these terms are used in ways that influence critical curriculum decisions.

The energizing and the integrating dimensions, thus far, seem more effective as conceptual tools than such concepts as "nuclear and cortical components" proposed by a group of scholars[15] concerned with curriculum development. And equally important, these dimensions permit us to transcend the perennial process-content dichotomy that continues to plague curriculum proposals. Moreover, they appear to have application as we attempt to describe curriculum phenomena in both the interactive (operating) state and the preactive (planning) state.

Instead of a more precise definition, we propose, at this point, to help the reader get a feel for the energizing and the integrating dimensions as design constructs by discussing: (a) how these dimensions seem to relate to what might be called an open-energy system, or organic view, of curriculum development; (b) how they relate to a transactional view of an individual learner processing his own experience; and (c) how they seem to relate to certain aspects of the communications process.

An Organic View

Support for using an open-energy system which functions as an interacting whole in nature is found in many places. Increasingly, interdisciplinary efforts to examine the nature of man seem to merge within such a framework.

Perhaps the ecologist will serve as the best example of an individual who has been concerned, for a long time, with the energizing and integrating aspects of all living things. He has posited an open-energy system, the ecological or ecosystem. This is not the simplified way of thinking about man in his environment which has sometimes stereotyped our thinking at the "nature study" level; rather it is a conceptual framework that seems to have promise for helping us gain control of some of the larger problems.

Ripley and Buechner, in describing the ecosystem, for example, identify seven points of view from which any entity might be studied.[16] And they assert that any entity—a physical system, a biological organism, or a complex of any kind—may be described and behavior predicted along these seven lines: (a) the components of the system; (b) the structure or morphology; (c) functions and processes—including regulating mechanisms; (d) changes in the system through time; (e) changes in the system through space; (f) transactions between the entity and its environment; and (g) classification. In effect, these scholars call for a human society-plus-environment level of integration.

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[15] *The Scholars Look at the Schools.* Washington, D.C.: Project on Instruction, National Education Association, 1962.

Using some such framework as Ripley and Buechner propose to think about the total curriculum development process would require one to describe and predict curriculum phenomena in each of the seven categories. Conjectures about the future that focus on curriculum design *per se* seem to lie more fully in category (f)—transactions between the entity (or entities) and its environment.

Perhaps further work on curriculum design matters would require us to posit, as Duncan and Frymier have done,[17] some such concept as "curricular event" and then to seek, as they propose, "tracers" which could be used to follow such events through the several phases of curriculum development. The energizing and the integrating aspects of an event might differ, for example, from the preactive stage to the active stage.

A Transactional View

In another field, the work of Ross Mooney supports the need for a conceptual framework large enough to show man in relation to his setting in nature. From his study of creative behavior, Mooney[18] has developed a set of concepts that have something of the organic quality of the ecosystem. He presents, for example, "a picture of creation-underway-in-nature" and asserts that emergent life everywhere might, in some sense, be one with the comprehending mind.

Mooney then develops the idea of continuous giving out and taking in by the organism—a transaction across the boundaries of an individual to give "sequential and orderly form to what goes on between inside and outside."[19] These transactions support his thesis that the creative act involves openness (extension), centering (integration), sequential ordering, and selective fitting. He sees these as basic human needs suggested by "our yearnings for belonging, being, becoming, and befitting." His models make use of the symbol for infinity to illustrate the commonality and at the same time the infinite ongoingness of the transactions.

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[16] S. Dillon Ripley and Helmut K. Buechner. "Ecosystem Science as a Point of Synthesis." *Daedalus* 96: 1192-99; Fall 1967.

[17] James K. Duncan and Jack R. Frymier. "Explorations in the Systematic Study of Curriculum." *Theory into Practice* 6: 180-99; October 1967.

[18] Ross L. Mooney. "Creation and Teaching." In: *Creativity and College Teaching.* Bulletin of Bureau of School Service, University of Kentucky 35: 45-62; 1963. p. 45.

What we propose, then, for the curriculum design model—one that will take into account both the energizing and the integrating dimensions—is based on an organic view of man in his natural environment. This man is viewed as a creator engaged in continuous transactions with his environment. These transactions, in the words of Mooney, involve both openness, or extension, and centering, or integration, between the inside and the outside. In short, we are focusing on the ecologist's concern with transactions between the entity and its environment.

At the center of our curriculum design model is *the individual learner processing his own experience.* We visualize this "flowing in" and "flowing out," to use Mooney's terms, as taking place in two realms—the integrating and the energizing.

A fair question at this point is: how does one make any practical use of this abstract construct in thinking about elementary school curriculum design problems?

The most direct use to which it can be put is that of an overlay, perhaps in the form of a matrix similar to that which Margaret Ammons proposes, in her paper which follows, as a way of testing out new ideas about the nature of verbal and nonverbal experiences in the cognitive, affective, and psychomotor realms.

And what does one lay it over? Here we might want to try out some of the conventional analyses of curriculum design elements. The most widespread, of course, identifies four such elements: purposes, selection of content, organization of content, and evaluation. In each of these categories there clearly are subcategories; that is, there are several kinds of purposes, several domains of content. Does thinking about energizing and integrating dimensions of these elements help us to reconceive in fresh ways what might be involved in the preactive and interactive phases of the conventionalized curriculum development process?

A more productive use of generating new design alternatives would involve this construct as an overlay on some such synthesis of structure as that proposed by Alice Miel in this publication. Especially fruitful would seem to be her categories, "Elemental Opportunities To Be Provided" and "Appropriate Settings."

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[19] *Ibid.*, p. 51.

Equally imaginative directions are indicated when one superimposes the energizing-integrating construct over a conceptualization of the "larger" learnings as Alexander Frazier has formulated them. He calls for the curriculum maker to give new thought to such realms as physical being, sensibility, love, invention, and endurance.[20] But beyond visualizing these as merely realms of purpose, which clearly they are, Frazier projects experiences which might characterize a curriculum designed to make such purposes operational. In effect, he is doing what Miel does in identifying some of the elements that are the ingredients for new curriculum designs if we can but see ways to use them.

Or one might work with the six realms of meaning that Phenix proposes and the illustrative curricular experiences he visualizes.

The Communications Process

It should be clear from the perspective taken in this discussion that one additional source, regardless of the kinds of elements that constitute the various proposals, is that made up of other learners. The push toward individualization of instruction sometimes tends to overlook the socializing dimension. That is, a learner processing his own experience is functioning in a setting of other learners processing their experience, and this must be recognized. Professor Ammons makes this fact clear in her analysis.

Given this much of the scenario, what can one say about curriculum organization itself? The actual mechanisms might be thought of as two continuing seminars extending through early childhood, the middle level, and the later levels of the total program. Sometimes there might be one teacher and sometimes several, but the curricular intent of the operations would have to be clear. Helpful here is Professor Miel's analysis of the assignment of primary responsibilities and her interpretation of appropriate settings.

The curriculum design that would emerge from an analysis of design elements in a specific situation, yet one that utilizes conceptual tools such as the energizing-integrating dimensions proposed here and one that takes a future-planning orientation, would help us make design decisions we are not now able to make. One can predict that the "logistics" content of curriculum planning sessions would be supplanted by more crucial content.

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[20] Frazier, *op. cit.*

It is our hunch that we probably know more about the integrating dimension than we do about the energizing. In the latter, we will need to learn to draw upon experiences which have in them ordinary, commonplace elements, but we must use them to lead us to an unaccustomed world—a world that does not conform to our established demands. This is perhaps what Macdonald[21] means when he talks about "controlled accidents" in the curriculum process. It might be that the consciousness-expanding aspects of human behavior that psychologists and others are attempting to identify are the domains we draw on in our work to make this part of the design construct operable.

An elementary teacher cast in the roles proposed in this scenario is called upon to display Arrowsmith's "turbulence"; he relates this responsibility of the teacher to the role he sees for the great writer whose "experience of life is composed of far more turbulence than order. If he is a great, or even skilled, artist, he knows that the turbulence is to be resolved, not reduced; that chaos is to be controlled, not suffocated and strangled by order."[22]

Obviously, much more thinking needs to go into the details of a curriculum design created to further the ideas sketched only briefly here. We need to face the question of how a curriculum design goes about being a performance of itself.

John Ciardi chose the title *How Does a Poem Mean?*[23] for his examination of poetry, not as a verbal trick but because of his interest in the "how" of meaning rather than the "what." He asks, in effect, how does a poem go about being a performance of itself?

Might we not ask the same question about a curriculum for children—*how does a curriculum mean?* Such is the quest for seeking new design alternatives for the elementary curriculum of the future.

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[21] James B. Macdonald. "An Example of Disciplined Curriculum Thinking." *Theory into Practice* 6: 166-71; October 1967.

[22] William Arrowsmith. "The Heart of Education: Turbulent Teachers." In: *Matrix '67*. Nashville, Tennessee: Division of Higher Education of the Methodist Church, 1967. pp. 25-28.

[23] John Ciardi. *How Does a Poem Mean?* Boston: Houghton Mifflin Company, 1958.

Communication: A Curriculum Focus

Margaret Ammons

GIVEN the charge of preparing an example of a new way to organize a curriculum for children, I have found my paper falling into what seems to me to be four natural sections. Three of these are in essence a foundation for the fourth, the proposal of a new curriculum design focused on communication. The paper opens with some remarks that provide general background, after which I define key terms and then proceed to spell out the basic assumptions on which the design proposal itself rests.

In any one of the sections you must recognize that much of what is set down is sheer assertion or assumption, although I may sometimes neglect to identify for the reader just where this is so. I defend myself in this regard on the grounds that where curriculum, as defined here, is concerned, we have little other than organized assumptions to go on. Therefore, I will try to present as tight a case for what I propose as I am able to do, believing firmly that in our present stage of professional development, there is no viable alternative to our doing so. Hopefully, this reasoning will be exonerated by the end of the paper.

General Background

My first assertion is that "The elementary school as we know it is largely the product of historical accidents." That is to say, the graded school for children roughly five or six to eleven or twelve years of age was not a result of national studies or assessment, nor careful experiments regarding child growth and development, nor an adoption or revision of what knowledge is of most worth, nor surveys to determine the most pressing needs of children in the given age bracket. I need not here catalogue the critical dates of the history of the elementary school in its entirety. Most assuredly, some few changes have occurred. The changes, however, were again not the result of the kind of thoughtful inquiry and introspection to which we would be pleased to admit. Rather, decisions regarding the elementary school have been made in response to such questions as "What will we do with rapidly increasing numbers of children?" And thus grades. Then, "What will be studied in each of these grades?" Thus graded textbooks and graded teachers. Not one of such decisions or answers was responsive to searching questions which, to me at least, appear relevant to children.

Given such decisions, we have then attempted to justify them after the fact, as in the following statement: "The best basic unit of organization yet devised is the self-contained classroom in which a group of children of similar social maturity are grouped together under the extended and continuous guidance of a single teacher." This statement was published originally in 1950 and quoted in 1960.[1] At the time of either publication, there were no other basic units of organization in sufficient numbers to have made a thoroughgoing comparative study which would have allowed such an assertion to be made.

Furthermore, programs established on such bases as described above have been maintained *in essence* in spite of data which point to something other than the present elementary school program and organization. Perhaps most critical, however, is that while we have tinkered with such elements as flexible buildings, team teaching, computers, nongrading, and so on, the curriculum has remained in essence the same.

To repeat: the curriculum, or in general those things which have been proffered to children to learn, has not changed in essence. By essence, I mean simply that, when the trimmings have been peeled away, what remains as the core around which the curriculum is built has remained unaltered for decades. One piece of evidence for this is a number of studies conducted in response to charges that schools of the 'fifties were not doing as well as schools of the earlier part of this century. In spite of the fact that we claimed to be doing something different, in which case we should simply have said, "You're right, we're not trying to do the same thing," we hastened to haul out tests which would, for example, measure in 1953 what the tests were initially designed to measure in 1933. If there is no difference between 1933 results and 1953 results on tests designed to measure 1933 performances, it would appear on the surface that whatever happened to children in 1953 was at least similar to what happened in 1933; that is, what happened to them in terms of learning opportunities.[2]

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[1] Association for Supervision and Curriculum Development. *The Self-Contained Classroom.* Washington, D.C.: the Association, 1960.

Let me put it in another way. Once upon a time we were faced with the task of making members of our society literate. Initially, this meant teaching the three R's. Slowly literacy came to be defined to include in addition the possession of certain information, social science information, for example. That is, subject matter "mastery" somehow came to be equated with success and literacy. Obviously, the school was the place where such mastery should occur.

Supposedly, however, our expressed purpose now is somewhat different from mere literacy. We speak of producing persons who possess such attributes as critical thinking, or analytical abilities, or abilities to sort out fact from fiction, or appreciation of the humanities. Yet the studies we have available reveal at least two unsettling generalizations about what transpires in elementary classrooms. First, teacher classroom behavior is determined more by textbooks than by any other single factor.[3] Second, approximately 90 percent of teachers' questions require no more of the learner than that he recall some specific piece of information or that he be able to put someone else's idea into his own words.[4]

The point is this: Despite aspirations and claims to the contrary, what actually happens in elementary classrooms, at least in large numbers of them, puts a ceiling on what children are expected to do. And ceilings are placed in the traditional subject areas. When children are given grades, they are typically evaluated in terms of performance in subject areas. Some attention is given to such other factors as the quality of their citizenship and their effort; but these are often judged as children function in subject areas. Furthermore, a rapid survey of statutory requirements regarding the elementary school program reveals that these are typically set down in terms of subject matter to be taught and amount of time to be spent per week on certain areas.

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[2] V. V. Miller and W. C. Lanton. "Reading Achievement of School Children—Then and Now." *Elementary English* 33: 91-97; February 1956.

[3] D. Gilmore. "A Critical Examination of Selected Instructional Practices." Unpublished doctoral dissertation. East Lansing: Michigan State University, 1963.

[4] F. J. Guszak. "A Study of Teacher Solicitation and Student Response Interaction About Reading Content in Selected Second, Fourth, and Sixth Grades." Unpublished doctoral dissertation. Madison: University of Wisconsin, 1966.

Thus, mastery of subject matter or literacy is still the operational goal in elementary education. Earlier, the expressed goal and the operational goal were the same and a program appropriate for their attainment was developed. Now there is a basic discrepancy between expressed and operational goals; the program is reflective of the operational, not the expressed goal. The reasons for this situation constitute an interesting problem for exploration, but such explorations are beyond the limits of this paper.

Thus while we want to change, while we alter school organization, we still divide the child's school world into the same subject areas which have been the basis for schooling for decades. Furthermore, with such notable exceptions as the work of Suchman, new projects have been developed within the framework of disciplines or academic specialties. The apparent objective in some such projects has been to make better mathematicians of elementary school children, or better scientists, or better historians, or better users of the mother tongue.

The question which cries for thoughtful consideration is whether the goal of the elementary school is to prepare young children for more adequate performance in the academic disciplines at later educational stages by earlier and earlier concentration on the disciplines—or whether the purpose of the elementary school is something quite different. While this question will be dealt with in some detail at a later point, let me assert now my own position—the purpose of the elementary school is *not* to create academicians at earlier and earlier ages.

Definitions

Let us turn now to the definition of some terms which will recur and upon the definition of which much of what is to follow hangs. There are five such terms: curriculum, instruction, communication, objectives, and evaluation.

By *curriculum* I mean an educational plan which includes a statement of objectives, a description of exemplary learning situations, and a description of exemplary evaluation techniques, the latter two designed in relation to objectives. This plan is drawn for a group of learners for whom the planners have responsibility, as, for example, all the children in a school district.

Instruction in this context is defined as the interaction between teacher and pupil or pupils which is intended to assist the learner toward the achievement of specified objectives.

Communication here is a rather simple concept. It is not burdened with the theoretical constructs of communications specialists, though such specialists have much to contribute. Here communication is defined as a two-way process in which one individual intends that a particular meaning be grasped by another or others, and in which others grasp the intended meaning. I acknowledge that the word "meaning" is fraught with ambiguity and various philosophical and psychological over- and undertones. But if I were to use the word "message," I would be in similar difficulty. When I use the word communication, I hope the reader will decode it with the same interpretation that I place upon it.

Objectives are statements of purpose which describe the desired student behavior and the content in relation to which the

sired student behavior and the content in relation to which the

student is to behave. Objectives have as their function guiding, not dictating to, teachers in selecting appropriate learning situations and evaluation techniques. Parenthetically, both behavior and content are conceived of here in very broad terms.

Evaluation is intended to mean a description of an individual's progress toward one or more objectives. So much for terms.

Basic Assumptions

There is a set of assumptions which I make about the nature of man, the knowable, the good society, and man's relation to it. From these, hopefully, grow some assumptions which relate directly to elementary education.

First, man is rational. By this I mean that man can see alternatives and choose among them. Further, in my frame of reference, rationality in man means that man does not act capriciously, whimsically, or without some justification which to him makes sense; that is, man behaves with reason. Even further, man can learn to increase his ability to act with reason, to improve through his own power his grounds for choosing. Man desires to improve, has the courage to improve, is curious and enthusiastic about things which have meaning for him. And finally, man is a social animal, requiring direct and vicarious human contact and response for survival. If I did not hold this belief, I would have little purpose in teaching.

Second, I assume that much is knowable which cannot be accounted for through the perception of the senses. I can know what it is like to be lonely or happy, but I know this in a way that is probably different from the way I know that something is blue, or hard, or sweet, or true, or harmonious. If this is so, then what I offer to a learner to know must include knowing in many ways. Knowledge cannot be limited to what is measured by responses to a paper and pencil test. What I accept as knowledge, and therefore knowable, must allow for empathic knowing, for sensitivity to another's perceptions of occurrences. It means that much of worth is known without my intervention or awareness. Learners do come to know without me. I assume that knowledge and knowing are a means, not an end. Finally, knowing, and thus learning, is deeply personal for each individual.

The good society is one in which man is free to choose, to make of himself what he will, to participate in the business of living according to his own lights. Such a society encourages independence of mind and spirit and does not bend humankind to its own ends, however magnanimous these may be. It is a society which provides the context for freedom of choice of the individual. The individual, in turn, has the obligation to behave as a human being, with the capacity for reasoning and choosing, with the ability to add to his store of knowledge whatever will allow him to become what he potentially is and to contribute to the good of all. It is a society which exists for the individual as he lives with others, not one for which the individual exists. It accords to the individual the ability to make his own rational and informed decisions.

The foregoing statements represent only a brief summary of where I stand on the questions which each of us must answer for himself as he contemplates the task of educating the young. If I am able to be consistent, these assumptions, or this value position, if you prefer, would seem to give rise to some further assumptions regarding elementary education:

1. The purpose of elementary schools is not to prepare a child for "a" or "the" next step in the sense of "getting him ready" for first grade or sixth grade, or high school, or college.

2. The best preparation for "next steps" is success at tasks which are valuable and relevant to a learner wherever he is.

3. Instruction and the plans for it derive or should derive from the curriculum of a particular school system or district.

4. Schools must define their curricula in terms of something which hopefully is relevant to the elementary child as he is.

5. Performing is different from learning. Performing is a short-lived change in behavior displayed in order to meet some external standard; learning is a persistent change in behavior displayed because the individual has "internalized" a new way of behaving or because he values it sufficiently to make it characteristic of his behavior patterns.[5]

6. Currently in elementary education, as elsewhere, we emphasize performance rather than learning.

7. Possession of information does not guarantee a permanent change in behavior.

8. The study of academic subject matter for its own sake does not guarantee an "educated" individual or one who has learned.

9. Mastery of academic subject matter is currently the end of elementary education. Some evidence in support of this assumption is the fact that success or failure is determined in part by this criterion.

10. Conditions are changing so radically and rapidly that educational needs of elementary children as defined in the past are no longer relevant.

11. Academic subject matter can in fact become the means not the end of education.

12. Academic subject matter can be justified in the curriculum as it contributes to the individual's ability to communicate.

13. To change the essence of the elementary curriculum, we must alter our pattern of thinking and talking about the elementary curriculum.

14. As long as we segment the elementary program without some unifying theme, we deny what many assert to be true in the lives of human beings, namely the need to see the world as a whole piece.

15. Given such conditions, I am willing to put my money on communication as relevant at any point in a human's life.

A Communications Curriculum

Given the foregoing rationale, what follows is a justification for a curriculum or the skeleton of a curriculum that I would propose as being more responsive to the child and his real world.

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[5] Margaret P. Ammons. "Do We Really Want Students to Learn?" *Oregon Foreign Language Newsletter,* October 1967.

The questions whose answers suggest or at least allow this curriculum are perhaps more important than the program itself. The curriculum proposal to follow is an illustration of a process in application more than it is a full-blown description of a program. Many of the questions it tries to answer have already been identified or implied.

Justification

Earlier I have denied either implicitly or explicitly that simple literacy is an acceptable purpose if it is the main or only purpose. I have also rejected the purpose of elementary education as that of preparing an individual for any next stage of education. Let me again disavow the notion of some that the purpose of elementary education is to teach children to think as does a scientist, a mathematician, or any other scholar in any other discipline.

The reasons for such rejections are probably obvious from what has been said to date. Let me here state some of these reasons briefly. I reject literacy as the end of education because it restricts the view held by the child of himself and his world. I reject preparation for next stages because in the main any stage of education has been artificially and arbitrarily determined; thus such preparation is also artificial and arbitrary. I reject the purpose of having children think as does a scholar because at the level of the elementary child, it is presumptuous to pretend that he is, in any real sense, capable of such activity. To assume that one child can think in the pattern of scholars in some seven to nine different fields is unrealistic and perhaps undesirable.

To try to force a child to choose a discipline of special interest at the elementary level, which might be an alternative, is to violate several of my basic assumptions. It would deny him the opportunity to become sufficiently acquainted with his world so that his choice would be informed and suitable. Inherent is the danger that the choice will be made for him in relation to something other than his individual welfare. Furthermore, to place such emphasis upon the disciplines is to make them become ends in themselves rather than means to be used by individuals for their own ends.

From these assertions an acceptable purpose of elementary education seems to me to emerge. In its broadest terms, the purpose of elementary education is to assist the individual child to cope with the world as he finds it. Such coping involves understanding, a major part of which is to be able to interpret accurately the stimuli he receives from his world. Here I include stimuli to the emotional or affective "senses."

More specifically, the purpose of elementary education is to help the child acquire the attitudes and skills he needs to interpret his world and to clarify for himself what the implications for him and for his own choices might be. As a child, it is more important for him to understand his world in his own terms than to behave in the mode of a scholar in any one or all of the disciplines. The term I have chosen for this kind of interpretation is communication.

My focus on the child's ability to communicate rests upon these facts: (a) communication is essential to both communal and individual living; (b) communication may be one of the activities in which we engage with the least skill;[6] and (c) maintenance of the fabric of our own society may be dependent upon communication. On this last point, for example, Richard Sanger suggests that one factor which may affect what happens in the expression of political feeling, whether it becomes violent or not, is the gap in communications between the ruling group and the discontented.[7]

Further, given individual differences, it seems likely that each of us may communicate effectively in only a small number of media, meaning by media language, body movement, painting, and the like. For example, when some 110 children were asked how many different ways they could think of to help someone understand what they meant, almost without exception they relied upon words as the medium. My own belief is that we fail to exploit many media as means of communication, thus reducing the possibilities for any one individual to choose the medium most appropriate for him and the particular message he is intent upon sending or receiving.

In any case, I view communication as a legitimate core around which to plan the program of the elementary school so that areas of study may contribute to the child's ability to cope with his world on his own terms. These areas of study—reading, mathematics, social sciences, the arts—can thus become functional as means rather than as ends. If we speak of the needs of children as a factor in organizing the elementary school, we may concede that one need to which the school can turn its attention in a unique fashion is communication; for it would appear that the elementary school is *the* agency which can utilize the "disciplines" in helping children to sharpen their communication. Since communication appears to be a need which will exist as far into the future as I care to predict, and a need which exists at any level of development, I am willing to posit this area as the basis for organizing the elementary program.

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[6] Ladislas Farago. *The Broken Seal.* New York: Random House, Inc., 1967.

[7] "Is Insurrection Brewing in U.S.?" Interview with Richard H. Sanger. *U.S. News and World Report* 63: 32-37; December 25, 1967.

With such an overall purpose, I would hope each child would be given the opportunity to:

1. Experience real communication with peers and with representatives of the appropriate academic disciplines
2. Participate in activities in which communication is essential to the individual in acquiring what he wants
3. Explore a variety of ways and means for getting messages across to others, particularly ways which he has not explored heretofore
4. Examine what ideas may most appropriately be communicated through the language of the different disciplines
5. Conversely, examine the role of mathematics, drama, and music in communication
6. Interpret the "messages" from the various disciplines and use such messages in making decisions about himself, his world, and his relation to it
7. Examine feelings, his own and those of others, to explore how these are communicated among humans and to comprehend the effects of feelings among humans
8. In general, increase sensitivity to his own communication as well as to the communication of others.

If these are at least some of the parameters of a curriculum with a communications focus, what comprises the substance? Time does not permit a detailed specification; however, I will list the objectives which I see as essential for elementary education, some description of organizing elements which bind the curriculum together, some illustrative activities, and several evaluation techniques which allow us to make some judgment regarding the progress of individual children.

Objectives

As I see it, there are four major objectives for the elementary school child: (a) that he be able to make reasoned and wise choices regarding his own behavior in a radically changing social context; (b) that he acquire the tools which allow such wise choices; (c) that he become increasingly independent in his learning; and (d) that he value learning as a means of coping with his world. Given what I believe regarding learning and the necessity for it to be a personal and individually internal affair, and given the definition I offered of communication, then communication is the key to the contribution which the elementary school can make to the individual child.

Elements

The organizing elements which run throughout the curriculum could be more clearly set forth with a diagram; however, let me try to construct a verbal diagram for you. Imagine a two by three table; that is, three columns and two rows, six cells. Across the top are three types of behavior; down the side are two types of activities.

Although there are many ways to categorize human behavior, *e.g.*, Guilford or Gallagher-Aschner, I find the work of the committee of University Examiners and the home economics group at the University of Illinois the most useful and presently the most comprehensive. These groups have described human behavior as having three dimensions: cognitive, affective, and psychomotor. No claim is made that these are absolutely discrete, but rather that any given behavior is more of one type than of the other two. No claim is made either that these descriptions are final. In any case, they are helpful in talking about what is possible in terms of human behavior. So across the top of the diagram place these three terms.

One way to talk about the manner in which these behaviors are put into operation is modes of behavior. I am not fond of the term, but it is intended to distinguish between *types* of behavior and the way in which one *uses* each behavior. The modes which seem most appropriate in the present context are verbal and nonverbal. Down the side of the diagram, then, place those two words.

Given this arrangement, it is possible to talk about engaging in behavior in either a verbal or nonverbal way. Thus we may speak of verbal-cognitive behavior, verbal-affective behavior, verbal-psychomotor behavior, and nonverbal-affective behavior, nonverbal-cognitive behavior, and nonverbal-psychomotor behavior.

Thus we have the elements around which the program is to be built. The next major task is to determine what broad categories of schoolroom activities can be developed to allow the child to participate in the various types of communication and how they might be arranged both horizontally and vertically, a rather difficult consideration.

Organization

Recalling one of the major problems I now see with the program of the elementary school, it is incumbent upon me to suggest an alternative. The problem is fragmentation or splitting of the child's academic world into unrelated parts. Perhaps what I am about to suggest is simply another type of fragmentation, and I suspect that it is. Yet I believe the proposed approach exhibits more unity than do other plans and may serve at least to reduce the problem of fragmentation.

Over the years there have been various attempts to relate horizontally all the aspects of the elementary program. These attempts have included, among others, the integrated curriculum, the fused curriculum, and the core curriculum. The present proposed solution sounds similar to some aspects of each of these, but the intent is different. The intent is to relegate the disciplines to the level of tools rather than to consider these as something to be dealt with for their own sake. Some may interpret this as anti-intellectualism. Not so. I contend that the most intellectually respectable activity in which a child can engage is that of relating to his world in such a way that he can fulfill the objectives I set forth earlier. If independence in and love of learning are anti-intellectual, so be it.

Now what kind of horizontal organization makes sense for the elementary school child who is exposed to a curriculum built around communication? It is *not* relating or attempting to relate to communication the instructional areas as they are presently structured; that is, there is no concern with maintaining the present boundaries of the subject areas. If it should occur in the process that language arts, as this area is currently construed, is most useful in the form now taught, then it should be retained in that form. However, the major concern is that the program be organized so that children have opportunities to engage in verbal-cognitive behavior so that some aspects of language instruction would be essential. Such instruction, however, would be in relation to a type of communication rather than in relation to mastery of an area of study.

Another example of horizontal organization may be taken from mathematics. This field, of course, has significant impact upon the world of children. The contention here is that for the elementary school child, understanding the contribution of the various areas of scholarship to his own personal world is more appropriate than becoming a master of the field itself. Thus, learning what the mathematician has to say to the individual, learning how these ideas are expressed, and grasping the implications of mathematical ideas is to be emphasized.

Further, since nonverbal-cognitive behavior is one of the elements to be stressed throughout the curriculum, opportunities to wrestle with the area of nonverbal symbolism become relevant and crucial. To illustrate, and parenthetically I am not a numerologist, mathematical operations are not the only contribution made by the field. In Wisconsin I wager if one says the number 15 something exciting is communicated. Or if one is a Cub fan, then the number 14 is significant. One kind of communication is nonverbal-cognitive, and it seems that restricting children's exposure to the symbols typically associated with mathematics to the study of mathematics *qua* mathematics is limiting the opportunity of children to develop their sensitivity to the ideas communicated most appropriately through nonverbal symbols.

Another form of communication is nonverbal-affective. According to those who have tilled the field of affective behavior, this is the most neglected area in the schools. Yet many assert that unless and until the affect is involved, little learning of a permanent nature will occur.[8] If, then, we are concerned with the affective behavior of elementary school children, we must design the curriculum to account for such behavior. Since by definition communication of any kind necessarily involves the affect, nonverbal-affective behavior is legitimate and necessary. What this implies for the classroom is a study of the "silent language" described by Hall.[9] It involves work with ballet, pantomime, and other vehicles for communicating feelings to others. It involves offering children the chance to explore their own feelings, how they communicate these to others, and how they can be increasingly certain that they are accurately interpreting the feelings and messages of others.

When verbal-affective behavior is under consideration, we can turn to the general semanticists. A study done with sixth-

[8] See: *Learning and Mental Health in the School.* Walter B. Waetjen and Robert R. Leeper, editors. Washington, D.C.: Association for Supervision and Curriculum Development, 1964; see particularly the chapter by: Donald Snygg. "A Cognitive Field Theory of Learning." pp. 77-96.

[9] E. T. Hall. *The Silent Language.* New York: Doubleday & Company, Inc., 1959.

grade children showed among other things that children of that age can deal with ideas in general semantics and that they find such involvement exciting. There is some reason to think that the materials used in that study could be adapted for younger children if this were desirable.

Looking, then, at horizontal organization, imagine a circle containing smaller, overlapping circles formed with broken lines. These six circles represent the six types of communication. You will recall the six: verbal-cognitive, verbal-affective, verbal-psychomotor, nonverbal-cognitive, nonverbal-affective, and nonverbal-psychomotor. The large circle represents a slice from the total curriculum, which may be thought of in this context as a cylinder. The area surrounding the six smaller circles contains the ideas from academic areas I have mentioned, along with whatever additional ideas are needed to complete the curriculum. It should be noted that the smaller circles are composed of broken lines and are overlapping, suggesting that at least theoretically fragmentation is reduced and that appropriate aspects of areas of study feed directly into one or more types of communication, with the types of communication forming a whole.

Vertical, or overtime, organization of the curriculum requires a different approach. Whereas horizontal organization accounts for what we now call scope, vertical organization is concerned with sequence. Two major sets of ideas must be brought into relation in determining sequence. These are ideas from child development and ideas from areas of study. Please notice I have shifted terminology from discipline to areas of study. The reason is that we may be caught in the present trap of a disciplines curriculum if we persist in adopting a discipline *in toto*. Rather we need to look to areas of study to determine what ideas from each area are relevant to the various types of communication.

At this point, I must remind myself that the six types of communication run throughout the entire program, and that each will always receive either major or minor emphasis, depending upon the developmental level of the child. If we look at the two modes of behavior, we have verbal and nonverbal. Included in the verbal mode are the usual oral, written, read, and heard. Early in the child's school career, I would place almost all emphasis upon the oral, spoken, and heard, moving to read and written only when the child has almost done it himself. This would apply across the board to all three types of behavior. Urgent attention, however, would be given to the nonverbal mode in all types of behavior at all points along the curriculum. The purpose of this progression is to allow the child to become increasingly proficient in the types of communication with which he is already familiar, assuming that more attention can be paid to the quality of his communication and his ability to interpret his world than if we force upon him a type of communication with which he has to struggle.

The foregoing illustrations give the general idea of the direction in which I would move in building a curriculum. To make the intent hopefully more clear, let me cite some specific classroom examples. Were I actually writing a curriculum for the use of teachers, I would describe such activities solely for the purpose of making clear the intent of the curriculum, not to prescribe what teachers must do with their own children.

Activities

First, classrooms would be characterized by talk, not silence, and the preponderance of such talk would be by children—among children and between children and the teacher. Where we now have reading groups, we would find discussion groups, painting groups, dance groups, drama groups, listening groups.

While there would be a professional teacher present, other adults would play a major role in the elementary school. Who better can discuss the language of the dance than someone who is in dance as a professional? Who better can help children to see what scientists are trying to say to the world than a scientist? Who better can explain the contribution of mathematics than the mathematician? Who better can help children understand the language of the fields than the scholars in the field? The role of the teacher becomes that of mediating for individual children and helping each child make personal use of what he has gleaned from the specialist.

Such activities require teachers who are skilled at ferreting out with each child the meaning of all such activities, teachers who honestly ask children questions which allow children to see for themselves what something means to them and for them. These are simple questions, which go something like this: What do you mean? Why does it mean that to you? How do you know? How do you feel about it? What difference does it make to you that you feel that way rather than another? What seems important to you? How do you think you come to know something?

Why? Does this add to anything you already have found out? Does it make something clearer than it was before? Does it make you feel better about yourself? Do you now feel more comfortable about things than you did before you had the talk with the gentleman about matter and energy? Conversely, children will be asking similar questions of each other and of teachers.

As children acquire facility in communicating with spoken and heard language, they may work toward such facility with the written word—their own and that of others. The necessity for dialogue with other children, with the teacher, with other adults, and with materials does not decrease, however. For now children need to be asking of what they read the same questions teachers have been asking of children. The time at which this becomes appropriate will differ for each child. The determination is made on the basis of what is known about the child, not upon such an extraneous measure as how long he has been in school, nor upon some such astrological grounds as the number of years he has been alive or in what month he was born.

Other kinds of activities are relevant to other kinds of communication. As I have already mentioned, the performing arts offer children the opportunity to see themselves and what they have to say to the world in a light different from that shed upon them when they are limited to communicating with words. Creative dramatics gives a chance for "talking with" others in a unique way. And this talking lets others see an individual in a way he may not be able to demonstrate with verbal language alone. Sports of many types can be drawn upon in the same way and for the same reasons.

Evaluation

Evaluation techniques become more critical in the curriculum I have only hinted at than they have been in more traditional types of approaches. You will recall that I am using the term evaluation to mean a description of progress of an individual child toward specified objectives. The techniques are little different from the kinds of activities described earlier. Through questions and discussions, teachers will be collecting evidence to let them know whether children are becoming increasingly abler to cope with their world on and in their own terms.

Teachers will be able to tell whether and in what ways a child needs something in particular—stimulation, sympathy, a sensitive ear, a group opportunity, or solitude in which he may struggle with an idea with which he is involved. The core of the techniques to be employed is sensitive observation by teachers of individual children and thorough, comprehensive record keeping. It should be noted here that there is an important distinction to be made between and among evaluation, grading, and reporting. The latter two are based upon the first and therefore related to it. Yet grading and reporting are not synonymous with evaluation. In passing, if I were to have my way, regardless of the curriculum, I would abolish grading and improve techniques of evaluating and reporting.

The reason for stressing evaluation is that, in my judgment, we ought to be concerned with a child's progress, not with developing categories for him to fit or labels for him to wear. True evaluation is a learning experience for the child and is not judgmental. Nor is it used to threaten or cajole, or to elevate, or to make odious comparisons. It has as its purpose assisting each child to grow in whatever direction has been set by him or with him. It is to gather information with and about each child so that he may see himself in relation to goals of which he is at least aware.

Let me give just one simple illustration. Suppose that a physician were brought to a classroom to discuss his field with children. The teacher knows each child well. During the discussion she observes each child but in all likelihood with a different purpose for each child. She makes a careful record of the amount and nature of the interaction and communication. This information will be used in subsequent discussions with an individual child to chart his next moves. This, in my estimation, is evaluation.

In conclusion, certainly all the foregoing has implications for teaching and instruction, for school organization, for buildings, for nonprofessional personnel, for materials, for deployment of teachers and pupils. These, however, go much beyond the scope of this paper's purpose. It is important to note that these latter considerations follow, not precede, the establishment of a purpose of education and the curriculum.

It is also vital to keep constantly in mind that a curriculum as I have used the term is nothing more than a plan. It is also nothing less. For years in education we have traveled on the assumption that there is some relation between curriculum and instruction. Richard Hawthorne has developed a model which allows us to examine the extent and nature of this assumed relation; his study reveals that this relation is at best tenuous. Therefore, it is essential that we do not rely upon plans, no matter how well done, to make the changes so vitally needed in elementary education.

Many questions can be raised about the proposal I have made for the restructuring of the elementary curriculum. One of the most common reservations expressed about such new ventures is that children will not be prepared for any one of a number of things: junior high school, high school, college, or a vocation. My response has to be that that is not our problem. It is the problem of the junior high school, the high school, the college, the vocations. We might even influence education at these levels. Let us counter with the charge that these institutions have the shoe on the wrong foot; they are not prepared for individuals who are learning to live in the world.

My assignment for this paper was to construct a curriculum that is "way out" and to justify it. Whether or not I have succeeded is at best doubtful. Perhaps the task could have been carried out in four sentences: (a) The job of the elementary school is to start each child on the road to accepting himself and to coping successfully with the world in his own way and on his own terms. (b) The present program of the elementary school cannot do this job. (c) To construct a program that holds promise of allowing the elementary school to do the job, we must change the essence of the way we think and talk about the elementary school program, not simply try to make the same old things over into a new image. Communication offers *one* possibility. (d) To build a new elementary curriculum which is relevant and real to the child requires untold intellectual and moral courage, as does any change in the face of opposition. However, given my position on the nature of man, I must make one last assertion: educators, being a part of humankind, are by nature courageous.

Elements and Structure: A Design for Continuous Progress

Alice Miel

PEOPLE in elementary education have a right to feel pleased and proud these days. Never before have so many academic scholars, research and development groups, and producers of materials been working for us. It would take all our time here just to review the projects under way in mathematics, science, language, and the various branches of social science. We are beginning to get rather fully developed programs in certain fields and promising parts of programs with supporting materials in other fields. In fact, the number of competing programs among which to choose presents a new difficulty in curriculum designing.

Yet all this activity is not enough. We will not achieve a design for continuous progress of whole persons merely by assembling various new pieces of curriculum that appeal to us even for very good reason. We have to make sure that important elements are not missing and that the elements have been structured into a mutually complementary and reinforcing whole. The opportunity to work on that problem in preparing this paper was most welcome.

Proposals for the School of the Future

Three analyses pertinent to our subject have recently become available. All three have grown out of interest in differentiating the instructional tasks of the school. Figure 1 shows in parallel columns the basic components of the analysis by each of the scholars, McKenna, Joyce, and Grannis.[1]

McKENNA **Learning Task Categories**	JOYCE **Kinds of Learning**	GRANNIS **Types of Setting**
1. Mastering skills and knowledge considered essential for all, e.g., reading, historical facts of nations, computational skills	1. Personal inquiry, where a child pursues an interest of his own	1. Tutorial—has a technical, didactic function, ends are set
2. Enlightenment in areas in which knowledge by general population is considered important but not every individual is required to be proficient, e.g., types of literature, geological structure	2. Independent study, where a child works with materials geared to his development, and teaches himself skills and knowledge that his teachers think are important to him	2. Laboratories—can be all over the landscape; teacher and student focused together on problem to which a specific solution is not known; master-apprentice relationship
3. Identifying interests and aptitudes pertaining to interests, e.g., exploratory experiences in industrial arts, stenography, music, creative writing, earth science	3. Group inquiry, where a child and his peers develop and inquire into problems that are important to them and appear significant to the teacher.	3. Community seminar—no one the master; various ages in group, all kinds of problems dealt with
4. Developing a potential talent in a specialized area, e.g., higher mathematics, a musical instrument, playwriting		4. Stable groups of 10-12 children to stay together from early school years into adolescence, meeting together somewhat as clubs and engaging in some of the school's activities as a group.
5. Attaining a variety of human relations attitudes and behaviors, e.g., acceptance and appreciation of cultural differences, group process.		

FIGURE 1. A Comparative View of Possible Components of a Program of Education

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[1] Bernard H. McKenna. *School Staffing Patterns and Pupil Interpersonal Behavior: Implications for Teacher Education.* Burlingame, California: California Teachers Association, 1967. p. 14.

Bruce R. Joyce. *The Teacher and His Staff—Man, Media, and Machines.* Washington, D.C.: National Commission on Teacher Education and Professional Standards and Center for the Study of Instruction, National Education Association, 1967. pp. 21-23.

Joseph C. Grannis. Teachers College, Columbia University, in a discussion, November 1967.

McKenna's proposal is part of a model for staff differentiation "related to learning tasks of pupils (skills, knowledge, talents, interpersonal attitudes and behaviors) rather than levels of rank of teachers (assistant, intern, beginning professional, etc.)." He thus suggests as teacher types the teacher technologist, the liberal enlightener, the identifier of talents, the developer of talents, and the facilitator of attitude and interpersonal behavior development.[2] With regard to the last type, he writes:

> . . . some of the newer technological devices and organizational arrangements, promising as they may be, mainly offer ways for promoting current learning task priorities. . . . The emerging educational tasks . . . , i.e., *developing in pupils interpersonal attitudes and behaviors,* are not being accomplished to a measurable degree by these devices. . . . The development of these learning tasks will rather demand the direct and intense involvement of teachers with pupils in a variety of interpersonal activities of both an individual and group nature.[3]

McKenna is intent on formulating a basis for "revised priorities in the preparation of those who teach" and is not proposing that five different types of teachers be assigned to share the instruction of each child.

Joyce's brief pamphlet gives an overall plan for a team teaching school of the future, showing how various kinds of instructional resources are to be made available to children. In the Joyce proposal, a team leader and an assistant team leader "are responsible for creating and carrying out the operating curricula for two hundred children."[4] Two other members of the team have professional status, and the rest are paraprofessionals. However, the supporting services proposed are considerable.

The three kinds of learning situations proposed in the Joyce model have been elaborated in a recent article in the *NEA Journal,* in which the authors give credit to Joyce "for his insight in describing a school with three curricular modes." Authors Fantini and Weinstein write:

> It will clarify the relationship of skills and concept curriculum to the programming of the affective realm if one visualizes a school with three interlocking tiers of content.
>
> One tier contains the basic skills, information, and concepts that are generally agreed upon as essential building blocks for the intellectual development of the child. . . .

[2] McKenna, *op. cit.*

[3] *Ibid.*, p. 10.

[4] Joyce, *op. cit.*, p. 10.

> The second tier involves the development of the learner's idiosyncratic interests and talents. . . .
>
> The third tier consists of a group-inquiry curriculum dealing with social issues and problems (such as civil rights). . . .[5]

The commentary on the third tier is of special importance in comparing the McKenna, Joyce, and Grannis formulations:

> Inherent in this tier is the development of the individual's interpersonal relationships: identifying, articulating, and evaluating his feelings, concerns, and opinions; comparing and contrasting them with those of others in a group. Although the affective may be used in *any* of the tiers in terms of process, it is chiefly in this third tier that we see the affective used as fully developed content.

Since the suggestions attributed to Grannis are based on notes taken in discussion, they do not represent a completely worked out scheme. Grannis builds a basis for the types of setting he proposes for education in a paper published recently.[6] He does so by analyzing the strengths and shortcomings of models of schools with which we have had experience. The three he describes in his article are the family model, the factory model, and the corporation model. Of the first he writes:

> Our terming this a family model emphasizes the intimate manner of the children's learning with and from each other, and the teacher's nurturing role, as one who shares with children certain interests and occupations, who provides materials and settings for the children's growth, and who facilitates the children's solving of problems that develop essentially out of their own life in the environment created for them.

His description of the factory school runs as follows:

> Students in a factory school classroom are generally found working on identical material at a uniform pace. . . . The factory school does not foster individual initiative and quality of work, but stresses instead a competition in sheer quantity and rate of production—the best rate being that which is neither too fast nor too slow for the line.

Grannis comments on the lack of collaboration in the factory school, the punitive authority that pervades it, and the uninterrupted monotony and tedium. Then he turns to the corporation school:

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[5] Mario D. Fantini and Gerald Weinstein. "Reducing the Behavior Gap." *NEA Journal* 57: 22-25; January 1968. p. 25.

[6] Joseph C. Grannis. "The School as a Model of Society." In: *Technology and the Curriculum.* Paul W. F. Witt, editor. New York: Teachers College Press, 1968. pp. 103-22.

> The full-fledged corporation school includes both team teaching and non-graded characteristics. . . . The whole attitude of the school is oriented toward planning and rationalization and toward the employment of specialized skills and technology. . . .

Grannis presents some criticisms of the corporation model:

> It is striking that in some corporation schools the students have even less control over their activities than in the factory school. . . . the coordination of a team's various activities and resources may impose more rigid time restraints on the classes than is the case within the self-contained classroom. . . . The teachers may do so much detailed planning collectively that very few decisions are left to be contingent on the immediate circumstances of the ensuing activities. A similar observation can be made about the programmed materials used in the school. . . .
>
> The feeling relationships between individuals in the corporation school are more detached than in the factory school . . . and certainly more detached than in the family school. In the factory school, the different individuals do many more things in common, whereas in the corporation school there are many more limited-purpose associations.
>
> A class in the factory school tends to develop a relatively stable social system, while the system in the corporation school is very fluid. . . .

When he comes to the point of outlining a national proposal for the school of the future, Grannis is very brief:

> We envision a combination of formal courses, laboratories, and seminars, involving professional teachers and laymen in different capacities in each setting. Much of the school's endeavor would have to be carried on outside the school proper.[7]

At another point, Grannis qualifies the last statement:

> The author believes that the family model, with some corporation features for more technical instruction, *is* the most appropriate model for the preschool and primary years. . . . The trouble with the family model as the students get older is its increasing discrepancy with the larger institutions that impinge on the students' lives. . . .

Grannis goes on to make a strong case for a new approach to a community school where there is "free traffic between adults and the young in the vicinity of the school." He lays great stress on collective endeavor and on initiation into society's institutions. But he cautions that "the schools that would result from these [community] adventures would run the risk of separating students from one another even more than the corporation school does today." He then suggests stable groups of peers as a remedy. This portion of the Grannis paper explains the third and fourth types of setting listed under his name in Figure 1.

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[7] Grannis, *op. cit.*

Among the three, McKenna, Joyce, and Grannis, there are noticeable similarities but also some useful differences. All seem agreed on the importance of a component in the school program where children have opportunity to "master" essential skills and knowledge. All see the importance of opportunity for the individual to pursue his own interests. With McKenna and Joyce, the discovery and development of talents are valued, with Grannis the laboratory component is tied with problem solution. All three provide for group experiences in which children have a chance to learn the skills of relating to others. Joyce and Grannis specify a social problem orientation here. Grannis is the only one to make a great point of breaking down school walls to some extent. Joyce is the only one to deal with the elementary school specifically.

All three analyses have been useful in working out the design for continuous progress in the elementary school which is the subject of the remainder of this paper. The sections to follow include: (a) the present writer's assumptions that underlie the elements proposed for incorporation into a design and the elements themselves; (b) the assumptions underlying the proposed way of structuring the elements; and (c) the proposed structure itself, with selected comments.

Proposed Elements of a Design for the Future

The following assumptions regarding the best interests of every person in this nation were kept in mind as elements of a design for the elementary school curriculum were derived:

1. A variety of high level intellectual skills will be required to cope with an increasingly cybernated society. Information retrieval and information processing skills will be ever more essential.

2. Privacy and the opportunity to develop as a unique and self-respecting individual will become more and more valued as crowding increases on this earth.

3. In a world of change, sources of stability will be cherished.

4. New views of what is and is not required for a good life will be needed as people in the U.S.A. face their responsibilities to have-not nations.

5. Democratic values and institutions will be put to new tests as world and national conditions continue to change. There will be increased need for understanding the basis of these values and institutions and how they may be both conserved and improved.

6. Skills of cooperative problem solving will be needed as never before in the face of continued threats to supplies of food, water, air, and other natural resources.

7. Understanding and empathy for fellow human beings will be basic to all efforts to share this earth.

8. Fostering of continuity in development of the whole person and contributing to social integration are two basic responsibilities of the school.

The elements proposed as essential for incorporation in a design for the continuous progress of those to be educated grow out of the foregoing assumptions.

1. *Opportunity to acquire symbolic tools.* This area of competence is sometimes thought of in terms of relatively simple skills such as beginning reading and handwriting, handling elementary mathematical concepts and operations, composing with words and learning how to spell them. Sometimes skills of searching for information and of ordering information according to logical relationships are included. All of these skills can be practiced by a lone individual.

Another group of skills, such as discussing and debating, explaining, questioning, demonstrating, and relating with others, requires a group of two or more persons.

A third set of skills can be practiced alone, if appropriate technology is available, but is enhanced by a group setting: hypothesizing, testing, criticizing, valuing, listening, interpreting, and inferring.

A fourth set of skills, some overlapping with those already mentioned, includes those which are essential to the development of a craft or crafts needed in most forms of creativity, e.g., the crafts of composing with words, sounds, movements, paint, clay, or other elements or materials.

Bower writes of the importance of symbols as tools:

> The sum and substance of a child's experience in school must, in large part, result in his ability to process and use symbols. The con-

> struction and differentiation of his world, of self and others, rest on the child's experiences with symbols and the events or actions in which the symbol was learned. . . .
>
> In addition to the need to learn to use symbols in order to communicate with ourselves and others, and to be free to take on new conceptual models, the child needs to learn how to use symbols to create realities of his own. . . .
>
> With symbols, a man can conjure up the future, re-experience the past, and play with the structure and function of the external world as he wishes. Teaching the skills of using symbols as conceptualizers of events, actions, and ideas beyond what can be seen, heard, touched, tasted, or felt is education's unique contribution in helping children to become effective human beings.[8]

The sophisticated level of symbol use described by Bower is not likely to be achieved in the early school years and probably not ever through independent study alone. And something beyond mere technical skills would seem to be required of a teacher for this purpose.

2. *Opportunity for personal exploration, inquiry, experimentation, and creativity.* The purposes of such opportunities are that children may: (a) identify and develop interests and talents; (b) satisfy a desire to know and understand places, events, and people (including self); and (c) find out what can be done with different media (words, colors, numbers, sounds, objects, body movements, and the like).

3. *Opportunity for systematic exploration of organized disciplines.* Here the purposes are that children may: (a) satisfy a desire to understand man's ways of knowing; and (b) acquire a basis for keeping up-to-date in such fields independently.

4. *Opportunity for cooperative inquiry and problem solving.* The purposes of such opportunities are that children may: (a) answer questions of "why" and "how" and "what if"; (b) derive satisfaction from solving common problems at a level either of understanding or of social action; (c) develop skills in group dynamics, human relationships, inquiry, problem solving, and decision making; and (d) develop appropriate values and maturing feelings toward self and others.

5. *Opportunity for experiences in managing an environment, giving service, and governing.* The purposes of such opportunities

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[8] Eli M. Bower. "The Magic of Symbols." *NEA Journal* 57: 28-31 +; January 1968. p. 31.

are that children may: (a) develop group process and other citizenship skills; and (b) develop values, attitudes, and feelings about people consistent with democratic ideals.

6. *Opportunity to enjoy literature, the arts, and physical recreation.* The purposes of such opportunities are that children may: (a) further their understanding of self and others and (b) further the maturing of their values and feelings about all kinds of people.

Assumptions Underlying a Proposed Structuring of Opportunities

Three basic assumptions underlie the way of combining various components into the design suggested in the section that follows. One assumption is that it is neither necessary nor desirable to "have it all one way," whether referring to the way the school is organized, the way the curriculum is organized, or the ways the tools and methods of instruction are used. For example, the discipline of history can be illuminated both by direct study of the nature of the discipline and by examining the origins of a social problem being worked on.

There can be a place for directed discovery, for free search, and for direct "telling" by a teacher. Groups may be formed on different bases for different purposes: they can be homogeneous or heterogeneous by age or a level of skill. In the case of programmed instruction, television, individualized instruction, teacher specialization, self-contained classroom, team teaching, or any one of a dozen other moot questions, it does not have to be a matter of all or nothing.

A second assumption is that a relatively stable group matrix is essential for promoting personal and social integration and continuity of development of each child. A group matrix obviously is necessary for cooperative inquiry and problem solving and for experiences in managing an environment and governing. Enjoyment and profit from literature and the arts often are enhanced in a group setting. Higher thought processes can more easily be cultivated in a setting in which mind interacts with mind and language must be sharpened for sophisticated communication. A group matrix is important for developing mature feelings about self and others.

Even in the case of independent practice of basic skills and personal exploration, a group matrix is useful in creating interests and in exposing need for information and skills, for advance training necessary for going it alone for a while, and for supplying the equivalent of the advance or introductory organizers found useful by Ausubel and Scandura and Wells.[9]

Independent study, as pointed out in a special issue of *Theory into Practice,* cannot be a panacea and it may well be a fraud perpetrated on the young. After stating the value of independent study as the "only learning approach which nurtures self-selection of the relevant, self-execution, and self-evaluation," the guest editor for the issue goes on to detail criticisms that have been leveled at this feature of education:

> . . . independent study programs may be subtle admissions that we don't know how to teach. Independent study programs are viewed as little more than devices for relieving teachers of any obligation to pay attention to students. Independent study works more easily in some disciplines than others, for example more readily in the natural sciences than in the social sciences. It is essentially intra- not interdisciplinary, encouraging knowledge for its own sake instead of for social application. Independent study appeals to a limited range of students—the highly intelligent, intensely motivated, academically inclined, overly confident, introverted. Overpersonalization of learning can result in self-centered learners who are antisocial or dehumanized. A final criticism is that a person must possess all of the skills attributed to being learned through independent study before he can be successful at it.[10]

Since a group matrix can serve so many purposes, membership in a relatively stable nongraded group of peers should be guaranteed each child in the elementary school. Such a group setting allows for perpetuation of the useful features of the family model of a school as described by Grannis.

A third assumption is that responsibility for the education of the child of the future must be shared by generalists and specialists, the generalist being charged with the overall responsibility for continuity and integration. The generalist will be needed to direct activities in the children's home base, be accountable for the movements and whereabouts of children in his "family" group, and will coordinate records helpful in tracing the overall development of individuals and the group.[11] PERT analysis techniques should be useful in mapping the various kinds of influence on the children when they fan out as individuals and small groups to various laboratories and centers in the school and when human and material resources are brought into the Family room.[12] The flow chart is another appropriate mapping device. The generalist will need time free from supervision and teaching of children to sample the experiences they are having elsewhere, to confer with specialists, and to maintain records.

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[9] David P. Ausubel. "The Use of Advance Organizers in the Learning and Retention of Meaningful Verbal Learning." *Journal of Educational Psychology* 51: 267-72; October 1960.

Joseph M. Scandura and Jay N. Wells. "Advance Organizers in Learning Abstract Mathematics." *American Educational Research Journal* 4: 295-301; May 1967.

[10] Frederick R. Cyphert. "Independent Study: The Dilemma." *Theory into Practice* 5: 205-208; December 1966. p. 205.

It should be noted that the generalist may well be competent in one or more specialized fields and in such cases may double as a specialist.

Proposed Structuring of a Design for Continuous Progress

No one except responsible local educators and their advisers can design a curriculum that takes into account the curriculum history of their community, the power factors at play there, the level of technology the community can support, the realities of school plants, and the competence of the teachers and official leaders. The proposal that follows can supply only the broadest outline of settings appropriate for the various kinds of opportunities recommended and of assignment of responsibility to the teaching staff. Figure 2 is intended to present such an outline.

The proportion of time allocated to activities centered in the Family Group room or flowing in and out of that center but still under the sponsorship of the Family Group teacher is expected to be reduced gradually from almost 100 percent in the case of three-year-olds to approximately 50 percent at the upper end of the middle school (conventional grades 7 and 8).

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[11] New labels are needed in connection with the home base envisioned in this proposal. The terms Family room, Family Group, and Family Group teacher are used henceforth.

[12] Program Evaluation and Review Techniques. See: Bruce N. Baker and Rene L. Eris. *An Introduction to PERT-CPM.* Homewood, Illinois: R. D. Irwin, 1964.

To go into detail about possible operation of all aspects of such a structure would require more space than is now available.[13] Within the scope of this paper three points have been selected for discussion: (a) suggested composition of a Family Group; (b) recommended forms of teacher planning; and (c) suggested uses of prepackaged curriculum and instructional materials.

Elemental Opportunities To Be Provided	Appropriate Settings	Assignment of Primary Basic Responsibility for Teaching Requisite Skills and Information
For acquisition of symbolic tools	Family room and multi-media center—tutorial and autoinstructional devices to be available in both settings	Family Group teacher for initiation into independent practice, supplemented by tutors
For personal exploration, inquiry, experimentation, and creativity	Family room, multi-media center, laboratories in school or community where master-apprentice relationship can be available	Family Group teacher for general research skills; appropriate specialist for specialized skills
For systematic exploration of organized disciplines	Family room or classroom of a specialist	Appropriate specialist (may be Family Group teacher)
For cooperative inquiry and problem solving (interdisciplinary)	Family room, ad hoc groups in a school setting, ad hoc groups of youth and adults in a community setting	Family Group teacher supplemented by group dynamics specialist(s)
For managing an environment, giving service, and governing	Family room and interclass councils and committees	Family Group teacher and faculty sponsors of student government activities
For enjoying literature, the arts, and physical recreation	Family room, multi-media center, classrooms and laboratories of specialists, and community facilities	Family Group teacher and appropriate specialists.

FIGURE 2. Proposed Structure of a Program of Elementary Education Designed for Continuous Progress

Composition of the Nongraded Family Group

It is suggested that a Family Group be relatively small, 15 children at most for ages three to four, 25 children at most for the middle school. A Family Group will have added resources within its own composition if it spans two to three years in age and includes children with different interests and competence. The group will offer the possibility of flexible subgrouping for different purposes if it is deliberately made up of clusters of children with certain kinds of likeness—size, intellectual interests, level of skill development.

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[13] The reader is referred to the useful sketch of a future school in operation devised by Bruce Joyce, *op. cit.*

The group will present fewer problems to teacher and children if it does not contain the widest extremes of intellectual ability. The composition of the group should hold promise of sufficient social cohesion and stability to draw in a few children with exceptionality that might otherwise be on the fringe.

Recommended Forms of Teacher Planning

Clusters of two to five Family Groups might well be created for purposes of teacher planning. While each teacher of a Family Group would be responsible for final and detailed planning for and with the children in his own classroom, the teachers of the cluster, along with paraprofessionals associated with them, might assume responsibility for the general direction in which the cluster teachers would work.

They might also: (a) exchange ideas about methods and materials; (b) plan for occasional regrouping within the cluster or across clusters; (c) plan to share certain community resources; and (d) share observations about the progress of children within the cluster. Specialists in school and community could be brought in on this planning at useful points. Cluster planning could bring about certain advantages of "team" planning associated with schools organized for "team teaching" without some of the disadvantages of the "corporation school" described by Grannis.

Uses of Prepackaged Curriculum Materials

The curriculum of a local school has never been developed entirely from scratch. Certain textbooks, with their selection and organization of content, have been used by all school systems. Courses of study and curriculum guides developed by school systems have been influenced by what is going on in other school systems as well as by the available instructional materials.

The difference today comes from the abundance of available self-teaching materials and kits of mutually reinforcing materials in certain areas. Materials that have been designed by competent people and produced by reputable agencies can be looked at in one of two ways: (a) will this material help us to do better what we already believe is worth doing? or (b) does this material suggest something we ought to consider teaching our children?

If generalist and specialist teachers pool their knowledge and work together to assess, select, and adapt materials for use within the school system, children can have a rich array to work with at a minimum expenditure of teacher time. This is not to say that materials should not be developed locally to supplement those that can be secured from outside sources. It does say that it is wise to take advantage of the enormous amounts of manpower and resources that in the past few years have gone into materials development on a national scale.

In conclusion, the proposals made in the latter half of this paper should be considered as a prospectus that might guide local curriculum planners. Six elements that might be incorporated in an overall design have been offered. No blueprint for school organization has been devised; yet the suggestions made represent an attempt to preserve the best features of what has been called the self-contained classroom, while taking account of more recent experience with uses of teacher specialization, team planning, and achieving a nongradedness seen only as a means to the end of continuous progress.

Like other persons cited in this paper, the author believes that we cannot be satisfied with continuous progress on simple learning skills alone. The direction in which we must work is the development of persons with the feelings, the social and conceptual skills, and the values that will help them play a noble part in a world moving from the twentieth to the twenty-first century. It was with such a view of continuous progress in mind that the design here offered was devised.

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